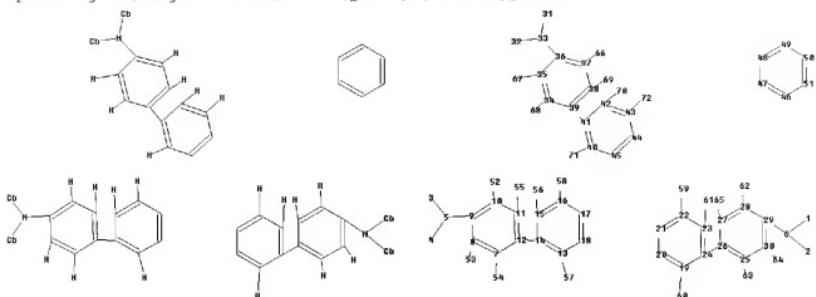


STN-10/594, 239

=>

Uploading C:\Program Files\STNEXP\Queries\10594239#1.str



chain nodes :

1 2 3 4 5 6 31 32 33 52 53 54 55 56 57 58 59 60
65 66 67 68 69 70 71 72

ring nodes :

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51

chain bonds :

1-6 2-6 3-5 4-5 5-9 6-29 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58
19-60 22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 32-33 33-36 34-68

35-67 37-66

38-69 39-41 40-71 42-70 43-72

ring bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35

34-39 35-36

36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48

48-49 49-50

50-51

exact/norm bonds :

5-9 6-29 33-36

exact bonds :

1-6 2-6 3-5 4-5 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58 19-60
22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 34-68 35-67 37-66

38-69 39-41 40-71

42-70 43-72

normalized bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35

34-39 35-36

36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48

48-49 49-50

50-51

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS 6:CLASS 7:Atom 8:Atom 9:Atom 10:Atom

11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom

```

20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:Atom 32:Atom
33:CLASS 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom
42:Atom 43:Atom
44:Atom 45:Atom 46:Atom 47:Atom 48:Atom 49:Atom 50:Atom 51:Atom 52:CLASS
53:CLASS 54:CLASS
55:CLASS 56:CLASS 57:CLASS 58:CLASS 59:CLASS 60:CLASS 61:CLASS 62:CLASS
63:CLASS 64:CLASS
65:CLASS 66:CLASS 67:CLASS 68:CLASS 69:CLASS 70:CLASS 71:CLASS 72:CLASS
Generic attributes :
1:
Saturation      : Unsaturated
2:
Saturation      : Unsaturated
3:
Saturation      : Unsaturated
4:
Saturation      : Unsaturated
31:
Saturation      : Unsaturated
32:
Saturation      : Unsaturated

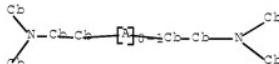
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L1 STRUCTURE UPLOADED

```

=> d 11
L1 HAS NO ANSWERS
L1        STR

```



Structure attributes must be viewed using STN Express query preparation.

```

=> s 11
SAMPLE SEARCH INITIATED 10:35:54 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 1808883 TO ITERATE

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0.1% PROCESSED        2000 ITERATIONS                                    0 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

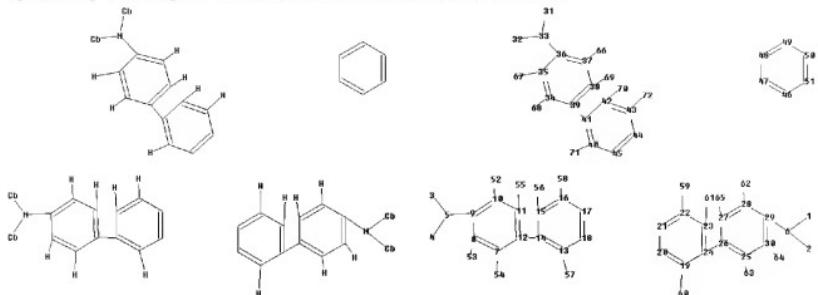
FULL FILE PROJECTIONS:    ONLINE    **INCOMPLETE**
                          BATCH     **INCOMPLETE**
PROJECTED ITERATIONS:    36110519 TO 36244801
PROJECTED ANSWERS:        0            0

```

L2 0 SEA SSS SAM L1

=>

Uploading C:\Program Files\STNEXP\Queries\10594239#1.str



chain nodes :

1 2 3 4 5 6 31 32 33 52 53 54 55 56 57 58 59 60 61 62 63 64
65 66 67 68 69 70 71 72

ring nodes :

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51

chain bonds :

1-6 2-6 3-5 4-5 5-9 6-29 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58
19-60 22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 33-36 34-68
35-67 37-66

38-69 39-41 40-71 42-70 43-72

ring bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35
34-39 35-36

36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48

48-49 49-50

50-51

exact/norm bonds :

5-9 6-29 33-36

exact bonds :

1-6 2-6 3-5 4-5 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58 19-60
22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 34-68 35-67 37-66

38-69 39-41 40-71

42-70 43-72

normalized bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35

34-39 35-36

36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48

48-49 49-50

50-51

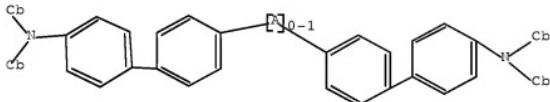
Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS 6:CLASS 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:Atom 32:Atom

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33:CLASS 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom  
42:Atom 43:Atom  
44:Atom 45:Atom 46:Atom 47:Atom 48:Atom 49:Atom 50:Atom 51:Atom 52:CLASS  
53:CLASS 54:CLASS  
55:CLASS 56:CLASS 57:CLASS 58:CLASS 59:CLASS 60:CLASS 61:CLASS 62:CLASS  
63:CLASS 64:CLASS  
65:CLASS 66:CLASS 67:CLASS 68:CLASS 69:CLASS 70:CLASS 71:CLASS 72:CLASS  
Generic attributes :  
1:  
Saturation : Unsaturated  
2:  
Saturation : Unsaturated  
3:  
Saturation : Unsaturated  
4:  
Saturation : Unsaturated  
31:  
Saturation : Unsaturated  
32:  
Saturation : Unsaturated
```

L3 STRUCTURE UPLOADED

```
=> d 13  
L3 HAS NO ANSWERS  
L3            STR
```



Structure attributes must be viewed using STN Express query preparation.

```
=> s 13  
SAMPLE SEARCH INITIATED 10:40:07 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 6041 TO ITERATE
```

```
33.1% PROCESSED      2000 ITERATIONS                                  10 ANSWERS  
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
SEARCH TIME: 00.00.01
```

```
FULL FILE PROJECTIONS:    ONLINE    **COMPLETE**  
                                  BATCH    **COMPLETE**  
PROJECTED ITERATIONS:      116159 TO    125481  
PROJECTED ANSWERS:           275 TO      933
```

L4 10 SEA SSS SAM L3

=> s 13 full
FULL SEARCH INITIATED 10:40:14 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 119677 TO ITERATE

100.0% PROCESSED 119677 ITERATIONS
SEARCH TIME: 00.00.02

388 ANSWERS

L5 388 SEA SSS FUL L3

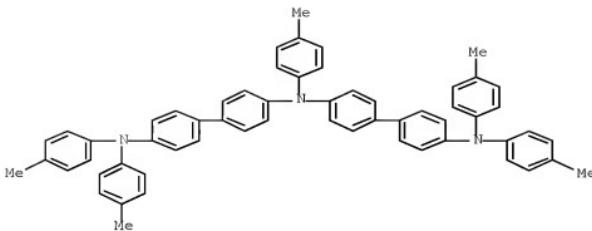
This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 15
L6 422 L5

=> s 16 and electrolumin?
108605 ELECTROLUMIN?
L7 329 L6 AND ELECTROLUMIN?

=> d ibib abs hitstr 323-329

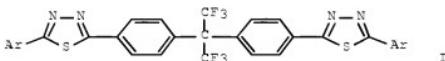
L7 ANSWER 323 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1995:562195 CAPLUS Full-text
DOCUMENT NUMBER: 123:20922
ORIGINAL REFERENCE NO.: 123:3811a,3814a
TITLE: Molecular design of hole transport materials for obtaining high durability in organic electroluminescent diodes
AUTHOR(S): Adachi, Chihiya; Nagai, Kazukiyo; Tamoto, Nozomu
CORPORATE SOURCE: Chemical Products R and D Center, Ricoh Co., Ltd., Shizuoka, 410, Japan
SOURCE: Applied Physics Letters (1995), 66(20), 2679-81
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The mol. design of hole transport materials (HTMs) for producing high durability in organic layered electroluminescent (EL) diodes was elucidated. The durability tests were examined using 14 hole transport materials in the cell structure of an anode/hole transport layer (HTL)/emitter layer (EML)/cathode. The ionization potential (I_p) of HTLs is the dominant factor for obtaining high durability in organic EL devices. The formation of the small energy barrier at the interface of a HTL/anode was required for high durability. Also, no straightforward relations between m.p., glass transition temperature of the HTMs, and durability of the EL devices were observed. The EL device using the HTM having a low I_p (5.08 eV) showed an especially remarkable stability. In this case, the half-life period of the initial luminance was beyond 500 h.
IT 134917-82-1
RL: DEV (Device component use); USES (Uses)
(hole transport material for obtaining high durability in organic electroluminescent diodes)
RN 134917-82-1 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-(bis(4-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N4,N4',N4'-tris(4-methylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 269 THERE ARE 269 CAPLUS RECORDS THAT CITE THIS RECORD (272 CITINGS)

L7 ANSWER 324 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1995:275316 CAPLUS [Full-text](#)
 DOCUMENT NUMBER: 122:302391
 ORIGINAL REFERENCE NO.: 122:54841a,54844a
 TITLE: Electroluminescent devices
 INVENTOR(S): Nagai, Kazukyo; Adachi, Chihaya; Sakon, Hirota; Oota, Masabumi
 PATENT ASSIGNEE(S): Ricoh Kk, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06248260	A	19940906	JP 1993-61049	19930225
PRIORITY APPLN. INFO.:			JP 1993-61049	19930225
OTHER SOURCE(S):	MARPAT	122:302391		
GI				



I

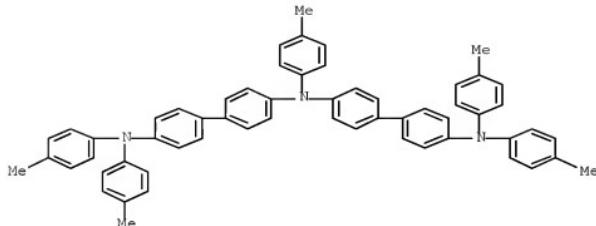
AB The devices contain a layer or plural layers, containing organic thiazole compds. I [Ar = (substituted) alkyl, (substituted) aryl, (substituted) heterocyclic], sandwiched by an anode and a cathode.

IT 134917-82-1

RL: DEV (Device component use); USES (Uses)
 (pos.-hole transporting layer component; electroluminescent devices containing thiazole derivs.)

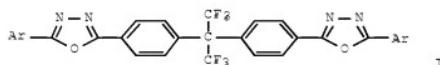
RN 134917-82-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-(bis(4-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N4',N4'-bis(4-methylphenyl)- (CA INDEX NAME)



L7 ANSWER 325 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1994:641361 CAPLUS Full-text
DOCUMENT NUMBER: 121:241361
ORIGINAL REFERENCE NO.: 121:43817a,43820a
TITLE: organic electroluminescent devices
INVENTOR(S): Nagai, Kazukyo; Oota, Masabumi; Sakon, Hirota; Adachi, Chihaya; Takahashi, Toshihiko
PATENT ASSIGNEE(S): Ricoh KK, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06065569	A	19940308	JP 1993-104993	19930407
OTHER SOURCE(S):	MARPAT	121:241361	JP 1992-186051	A1 19920620
GI				



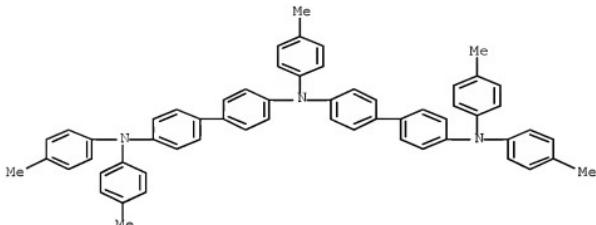
I

AB The title element comprises: an electron-transport or a phosphor layer consisting of oxadiazole compound I [Ar = (substituted) alkyl, (substituted) aryl, (substituted) heterocyclic aromatic ring]. The element is suited for use in the white-light-emitting devices.
IT 134917-02-1
RL: PRP (Properties)

(electron-transport layers from, in white light-emitting
electroluminescent devices)

RN 134917-82-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-(bis(4-methylphenyl)amino)[1,1'-
biphenyl]-4-yl]-N4,N4'-tris(4-methylphenyl)- (CA INDEX NAME)



L7 ANSWER 326 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1994:545550 CAPLUS [Full-text](#)

DOCUMENT NUMBER: 121:145550

ORIGINAL REFERENCE NO.: 121:26101a,26104a

TITLE: Organic thin-film electroluminescent element

INVENTOR(S): Adachi, Chihaya; Oota, Masabumi; Sakon, Hirota;
Takahashi, Toshihiko

PATENT ASSIGNEE(S): Ricoh KK, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05299174	A	19931112	JP 1992-126815	19920420
PRIORITY APPLN. INFO.:			JP 1992-126815	19920420

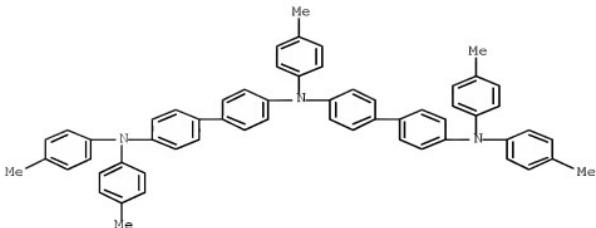
AB In the title element comprising an anode, a cathode, and 1 or a plurality of organic compound layers sandwiched by the anode and cathode, the relative difference of the ionization potentials of the anode (preferably an ITO electrode) and an organic compound layer (may be organic hole transport layer, organic hole transport light-emitting layer, or a single light-emitting organic compound layer) in contact with the anode is <0.85 eV. The electroluminescent element shows high initial luminance-maintaining ratio and superior durability.

IT 134917-82-1

RL: USES (Uses)
(organic thin-film electroluminescent element with hole
transport layer of, ionization potential of)

RN 134917-82-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-(bis(4-methylphenyl)amino)[1,1'-
biphenyl]-4-yl]-N4,N4'-tris(4-methylphenyl)- (CA INDEX NAME)



L7 ANSWER 327 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1994:65553 CAPLUS [Full-text](#)

DOCUMENT NUMBER: 120:65553

ORIGINAL REFERENCE NO.: 120:11657a,11660a

TITLE: Electroluminescent devices including triamine hole-transporting compounds

INVENTOR(S): Adachi, Chihiaya; Oota, Masabumi; Sakon, Hirota; Takahashi, Toshihiko; Shimada, Tomoyuki

PATENT ASSIGNEE(S): Ricoh Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05239455	A	19930917	JP 1992-73306	19920225
JP 3565870	B2	20040915		
JP 2003031372	A	20030131	JP 2002-168518	19920225
			JP 1992-73306	A3 19920225

PRIORITY APPLN. INFO.: MARPAT 120:65553

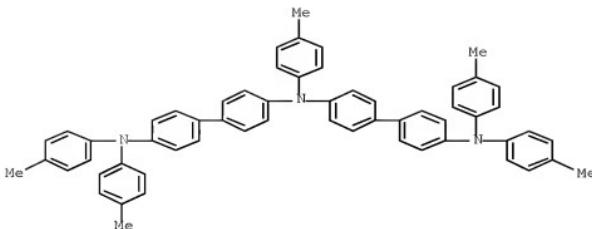
OTHER SOURCE(S): AB The title devices comprise, between a hole-injection electrode and an electron-injection electrode, (1) a double layer comprising successively, from the implanting electrode side, an organic hole-transporting layer and an organic light-emitting layer or (2) triple layer comprising an organic hole-transporting layer, an organic light-emitting layer, and an organic electron-transporting layer, in which the hole-transporting layer contains Ar1Ar2NBInNAr5B2nNAr3Ar4 [Bln, B2n = (substituted) arylene; n = 1-4; Ar1-5 = H, (substituted) alkyl, aryl].

IT 134917-82-1

RL: PRP (Properties)
(electroluminescent devices with hole transport layers containing)

RN 134917-82-1 CAPLUS

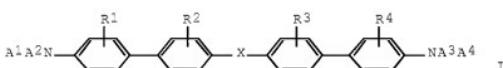
CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-(bis(4-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N4,N4',N4'-tris(4-methylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD
(2 CITINGS)

L7 ANSWER 328 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1993:417890 CAPLUS Full-text
DOCUMENT NUMBER: 119:17890
ORIGINAL REFERENCE NO.: 119:3197a,3200a
TITLE: Preparation of bis(aminobiphenyl) compounds and photoconductors containing them as charge-transporting agents
INVENTOR(S): Ueda, Hideaki
PATENT ASSIGNEE(S): Minolta Camera Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05045906	A	19930226	JP 1991-205203	19910815
JP 3079665	B2	20000821		
US 5314775	A	19940524	US 1992-926284	19920810
PRIORITY APPLN. INFO.:			JP 1991-205203	A 19910815
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT				
OTHER SOURCE(S):	MARPAT	119:17890		
GI				



AB Photoconductors comprise an elec.-conductive support having thereon a photosensitive layer containing the title compds. I (R1-4 = H, alkyl, alkoxy, halo; A1-4 = alkyl, aralkyl, aryl, biphenyl, heterocycl, these groups may be substituted; X = O, S, CR5R6; R5-6 = H, alkyl, aryl). The photoconductors

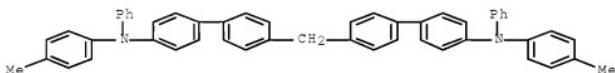
are excellent in sensitivity, charge transportability, initial surface potential, dark decay, and durability in repeated use, and are useful for electrophotog. photoreceptors and electroluminescent devices.

IT	148150-49-6	148150-50-9	148150-51-0
	148150-52-1	148150-53-2	148150-54-3
	148150-55-4	148150-56-5	148150-57-6
	148150-58-7	148150-59-8	148150-60-1
	148150-61-2	148150-62-3	148150-63-4
	148150-64-5	148150-65-6	148150-66-7

RL: TEM (Technical or engineered material use); USES (Uses) (electrophotog. photoreceptor charge-transporting agent)

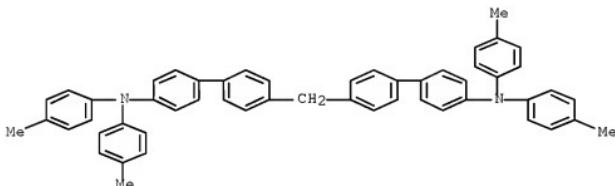
BN 148150-49-6 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(4-methylphenyl)-4'-(4-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl)methyl]-N-phenyl-(CA INDEX NAME)



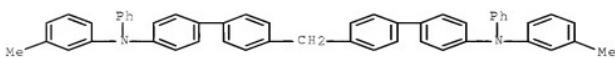
BN 148150-50-9 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-methylenebis[N,N-bis(4-methylphenyl)-
(9CI) (CA INDEX NAME)



BN 148150-51-0 CAPIUS

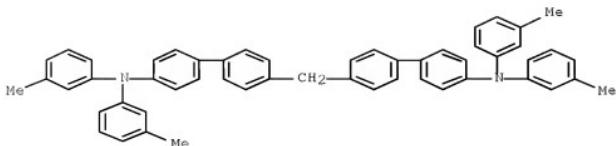
RN 145-51-0 CARBO
CN [1,1'-Biphenyl]-4-amine, N-(3-methylphenyl)-4'-(4'-(3-methylphenyl)phenylamino)[1,1'-biphenyl]-4-yl)methyl]-N-phenyl- (CA INDEX NAME)



RN 148150-52-1 CAPLUS

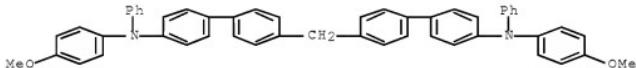
CN [1,1'-Biphenyl]-4-amine, 4',4'''-methylenebis[N,N-bis(3-methylphenyl)-

(9CI) (CA INDEX NAME)



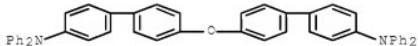
RN 148150-53-2 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-methylenebis[N-(4-methoxyphenyl)-N-phenyl-
(9CI) (CA INDEX NAME)



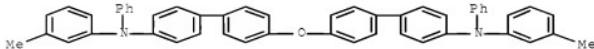
RN 148150-54-3 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-[(4'-(diphenylamino)[1,1'-biphenyl]-4-yl)oxy]-
N,N-diphenyl- (CA INDEX NAME)



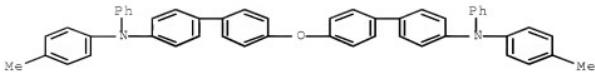
RN 148150-55-4 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(3-methylphenyl)-4'-[(4'-(3-methylphenyl)phenylamino)[1,1'-biphenyl]-4-yl]oxy]-N-phenyl- (CA INDEX NAME)



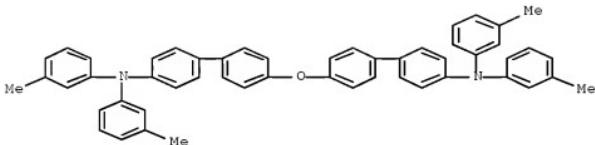
RN 148150-56-5 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(4-methylphenyl)-4'-[(4'-(4-methylphenyl)phenylamino)[1,1'-biphenyl]-4-yl]oxy]-N-phenyl- (CA INDEX NAME)



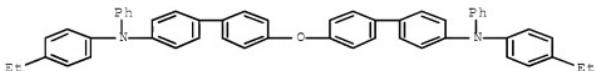
RN 148150-57-6 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-oxybis[N,N-bis(3-methylphenyl)- (9CI)
(CA INDEX NAME)



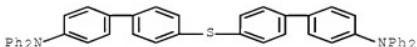
RN 148150-58-7 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-oxybis[N-(4-ethylphenyl)-N-phenyl- (9CI)
(CA INDEX NAME)



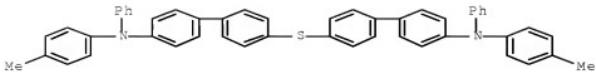
RN 148150-59-8 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-[(4'-(diphenylamino)[1,1'-biphenyl]-4-yl)thio]-N,N-diphenyl- (CA INDEX NAME)



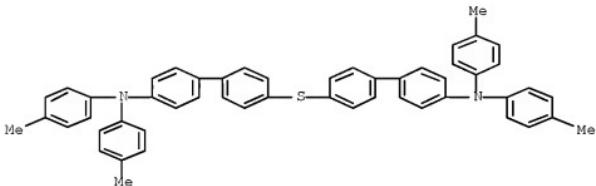
RN 148150-60-1 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(4-methylphenyl)-4'-[(4'-(4-methylphenyl)phenylamino)[1,1'-biphenyl]-4-yl]thio]-N-phenyl- (CA INDEX NAME)



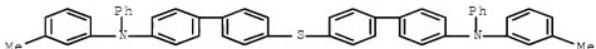
RN 148150-61-2 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-thiobis[N,N-bis(4-methylphenyl)- (9CI)
(CA INDEX NAME)



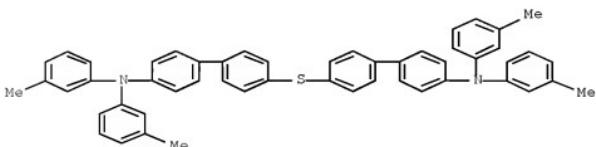
RN 148150-62-3 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(3-methylphenyl)-4'-[4'-(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]thio]-N-phenyl- (CA INDEX NAME)



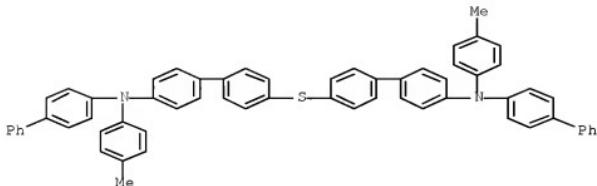
RN 148150-63-4 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-thiobis[N,N-bis(3-methylphenyl)- (9CI)
(CA INDEX NAME)



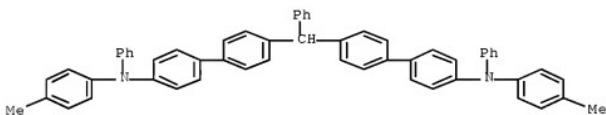
RN 148150-64-5 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'',4'''-thiobis[N-(1,1'-biphenyl)-4-yl-N-(4-methylphenyl)-] (CA INDEX NAME)



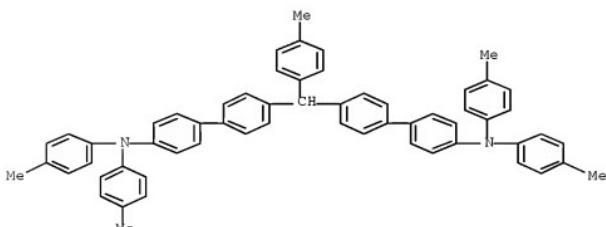
RN 148150-65-6 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(4-methylphenyl)-4'-[[4'-(4-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylmethyl-N-phenyl- (CA INDEX NAME)



RN 148150-66-7 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-[[4'-(bis(4-methylphenyl)amino)[1,1'-biphenyl]-4-yl](4-methylphenyl)methyl]-N,N-bis(4-methylphenyl)- (CA INDEX NAME)



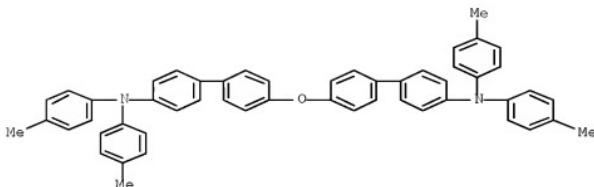
IT 148150-48-5P

RL: PREP (Preparation)

(preparation of, as electrophotog. photoreceptor charge-transporting agent)

RN 148150-48-5 CAPLUS

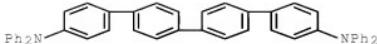
CN [1,1'-Biphenyl]-4-amine, 4',4'''-oxybis[N,N-bis(4-methylphenyl)- (9CI)
(CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

L7 ANSWER 329 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1993:90270 CAPLUS Full-text
DOCUMENT NUMBER: 118:90270
ORIGINAL REFERENCE NO.: 118:15663a,15666a
TITLE: Organic electroluminescent device
INVENTOR(S): Sato, Yoshiharu; Otsuka, Shigenori
PATENT ASSIGNEE(S): Mitsubishi Kasei Corp., Japan
SOURCE: Eur. Pat. Appl., 18 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 510541	A1	19921028	EP 1992-106677	19920416
EP 510541	B1	19951227		
R: DE, FR, GB, NL				
JP 04320484	A	19921111	JP 1991-88444	19910419
JP 2998268	B2	20000111		
US 5247226	A	19930921	US 1992-870310	19920417
PRIORITY APPLN. INFO.:			JP 1991-88444	A 19910419
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT				
OTHER SOURCE(S): MARPAT 118:90270				
AB Electroluminescent devices comprising an anode, an organic hole injection transport layer, an organic luminescent layer, and a cathode are described in which the hole injection transport layer contains a metal complex and/or a metal salt of an aromatic carboxylic acid.				
IT 145898-89-1				
RL: PRP (Properties)				
electroluminescent devices with metal salt-containing hole injection layers containing)				
RN 145898-89-1 CAPLUS				
CN [1,1':4',1'':4'',1'''-Quaterphenyl]-4,4'''-diamine, N4,N4,N4'',N4'''-tetraphenyl- (CA INDEX NAME)				



OS.CITING REF COUNT: 11 THERE ARE 11 CAPLUS RECORDS THAT CITE THIS RECORD (11 CITINGS)

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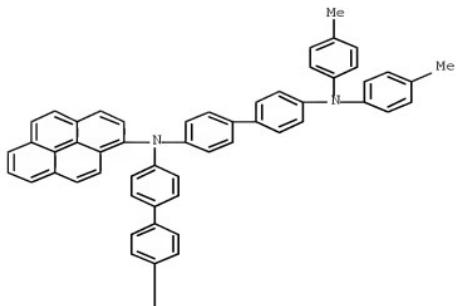
L7 ANSWER 319 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1995:867611 CAPLUS Full-text
 DOCUMENT NUMBER: 123:285572
 ORIGINAL REFERENCE NO.: 123:51170h,51171a
 TITLE: Preparation of pyrene derivatives as electroluminescent materials
 INVENTOR(S): Tamoto, Nozomi; Nagai, Kazukyo; Adachi, Chihaya;
 Sakon, Hirota
 PATENT ASSIGNEE(S): Ricoh Kk, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07101911	A	19950418	JP 1993-271360	19931004
JP 3549555	B2	20040804		
PRIORITY APPLN. INFO.:			JP 1993-271360	19931004
OTHER SOURCE(S):	MARPAT	123:285572		
GI				

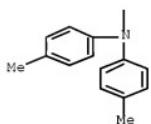
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title compds. I [R1 - R3 = halo, cyano, etc.; l = 0 - 9; m = 0 -4; n = 0 - 5] are prepared An electroluminescent element containing the title compound II (preparation given) gave emission with high luminance for 1 mo.
 IT 169195-00-0P 169195-01-1P 169195-02-2P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (preparation of pyrene derivs. as electroluminescent materials)
 RN 169195-00-0 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-(bis(4-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)-N-1-pyrenyl- (9CI) (CA INDEX NAME)

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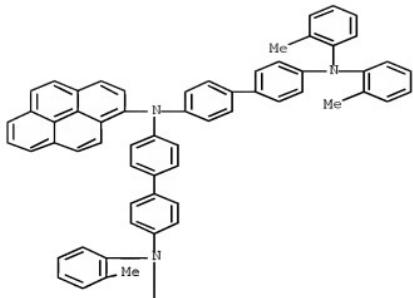
PAGE 2-A



RN 169195-01-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-(bis(2-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N',N'-bis(2-methylphenyl)-N-1-pyrenyl- (9CI) (CA INDEX NAME)

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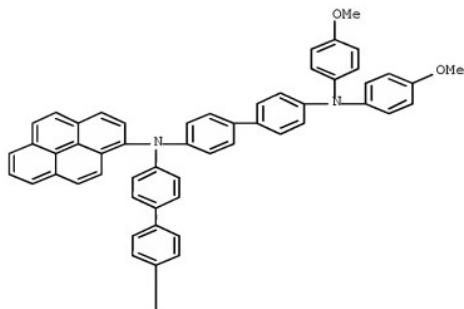
PAGE 2-A

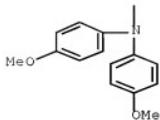


RN 169195-02-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-(bis(4-methoxyphenyl)amino)[1,1'-biphenyl]-4-yl]-N',N'-bis(4-methoxyphenyl)-N-1-pyrenyl- (9CI) (CA INDEX NAME)

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L7 ANSWER 320 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1995:769803 CAPLUS Full-text
 DOCUMENT NUMBER: 123:183664
 ORIGINAL REFERENCE NO.: 123:32405a,32408a
 TITLE: Amine compound and electro-luminescence device comprising same.
 INVENTOR(S): Tomiyama, Hiromitsu; Oshino, Masahiko; Nakanishi, Naoko; Suzuki, Mutsumi; Fukuyama, Masao; Murakami, Mutsuaki; Nambu, Taro
 PATENT ASSIGNEE(S): Hodogaya Chemical Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.
 SOURCE: Eur. Pat. Appl., 98 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

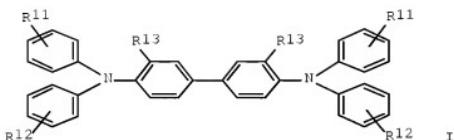
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 650955	A1	19950503	EP 1994-117206	19941031
EP 650955	B1	19980819		
R: DE, FR, GB				
JP 07126615	A	19950516	JP 1993-273883	19931101
JP 3194657	B2	20010730		
JP 07126225	A	19950516	JP 1993-293800	19931101
JP 3574860	B2	20041006		
JP 07126226	A	19950516	JP 1993-293801	19931101
JP 3220950	B2	20011022		
JP 2001273978	A	20011005	JP 2001-49489	19931101
JP 3529735	B2	20040524		
JP 07331238	A	19951219	JP 1994-132744	19940615
JP 08003122	A	19960109	JP 1994-155470	19940615
JP 08100172	A	19960416	JP 1994-236622	19940930
JP 3274939	B2	20020415		
JP 2001181240	A	20010703	JP 2000-332663	20001031
JP 3567323	B2	20040922		
JP 2002343577	A	20021129	JP 2002-83871	20020325
JP 3745296	B2	20060215		
JP 2004182740	A	20040702	JP 2004-21884	20040129
JP 3880967	B2	20070214		
PRIORITY APPLN. INFO.:			JP 1993-273883	A 19931101

JP 1993-293800	A 19931101
JP 1993-293801	A 19931101
JP 1994-132744	A 19940615
JP 1994-155470	A 19940615
JP 1994-236622	A 19940930
JP 2001-49489	A3 19931101

OTHER SOURCE(S):

MAPAT 123:183664

GI



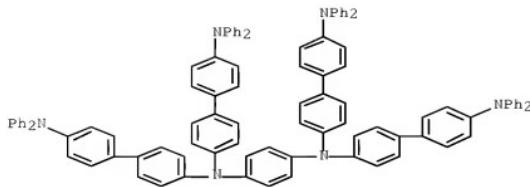
AB Novel amine compds. useful as electron-transporting materials to be incorporated in organic electro-luminescence (EL) devices are described, e.g., having the formula I [R1, R2 = H, alkyl, alkoxy, Ph, alkylphenyl, alkoxyphenyl, with the proviso that ≥1 of R1 and R2 is n-Bu, i-Bu, sec-Bu, tert-Bu, Ph, alkoxyphenyl, alkylphenyl; R3 = H, alkyl, alkoxy, Cl]. Five more Markush structures are given. The organic EL device can find wide application in various display units, requires a low applied voltage and exhibits a high luminance and an excellent stability.

IT 167218-73-7 167218-74-8 167218-75-9
 167218-76-0 167218-77-1 167218-78-2
 167218-79-3 167218-80-6 167218-81-7
 167218-82-8 167218-83-9 167218-84-0
 167218-85-1 167218-86-2 167218-87-3
 167218-88-4 167218-89-5 167218-90-8
 167218-91-9 167218-92-0 167218-93-1
 167218-94-2 167218-95-3 167218-96-4
 167218-97-5 167218-98-6 167218-99-7
 167219-00-3 167219-01-4

RL: DEV (Device component use); USES (Uses)
 (amine compound as electron-transporting material for
 electroluminescent devices)

RN 167218-73-7 CAPLUS

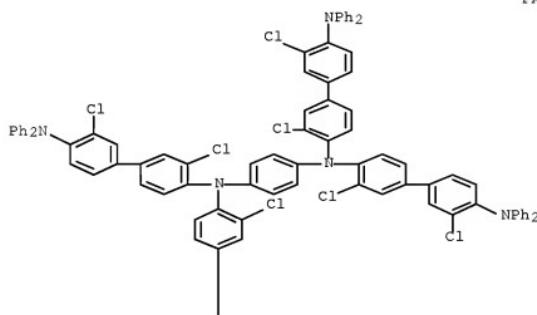
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-1,4-phenylenebis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]N',N'-diphenyl- (9CI) (CA INDEX NAME)



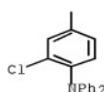
RN 167218-74-8 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-1,4-phenylenebis[3,3'-dichloro-N-(3,3'-dichloro-4'-(diphenylamino)biphenyl)-N'-diphenyl]- (9CI)
(CA INDEX NAME)

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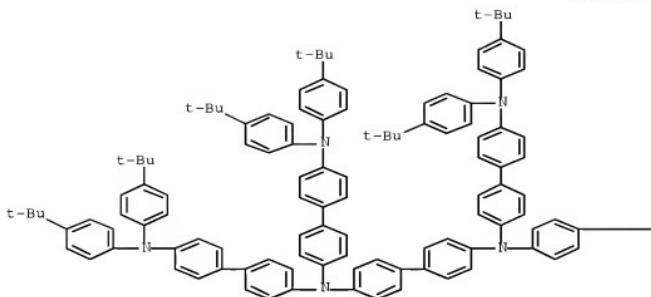
PAGE 2-A



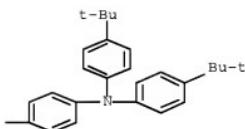
RN 167218-75-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N₄,N₄,N_{4'},N_{4'}-tetrakis[4'-(bis[4-(1,1-dimethylethyl)phenyl]amino)biphenyl]- (CA INDEX NAME)

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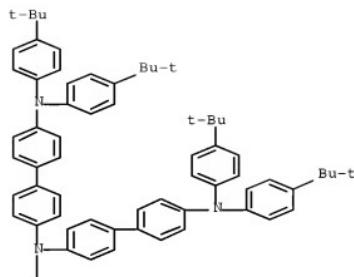
PAGE 1-B



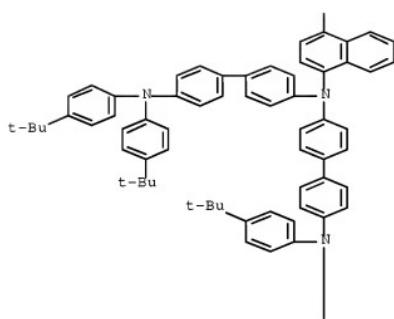
RN 167218-76-0 CAPLUS

CN 1,4-Naphthalenediamine, N1,N1,N4,N4-tetrakis[4-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

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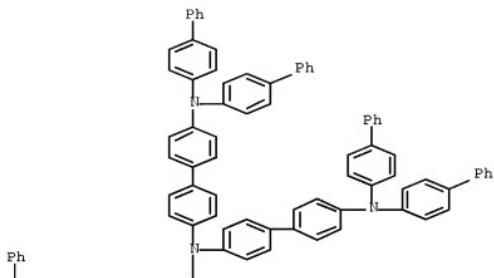


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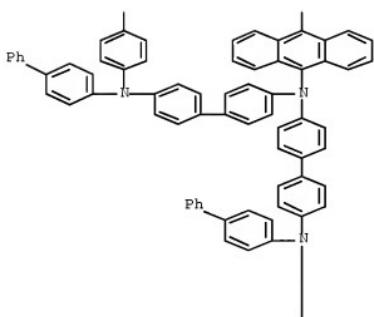


RN 167218-77-1 CAPLUS
CN 9,10-Anthracenediamine, N9,N9,N10,N10-tetrakis[4'-(bis([1,1'-biphenyl]-4-yl)amino)[1,1'-biphenyl]-4-yl] (CA INDEX NAME)

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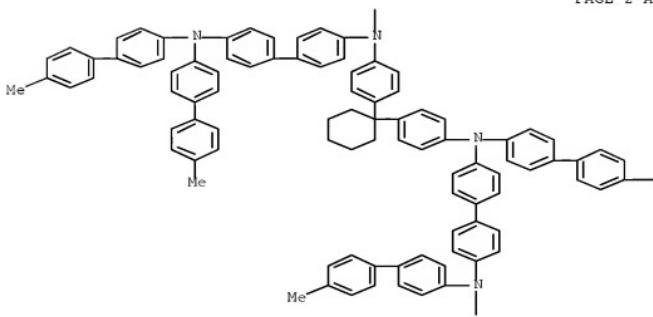
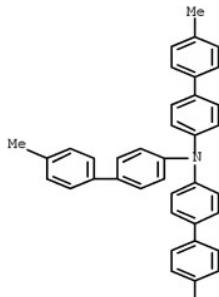
PAGE 2-A



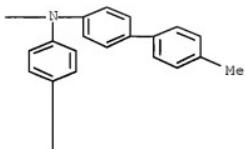


RN 167218-78-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(cyclohexylienedi-4,1-phenylene)bis[N-[4'-(bis(4'-methyl[1,1'-biphenyl]-4-yl)amino)[1,1'-biphenyl]-4-yl]-N',N'-bis(4'-methyl[1,1'-biphenyl]-4-yl)] (9CI) (CA INDEX NAME)



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PAGE 3-B

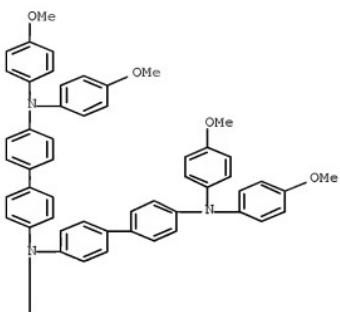


RN 167218-79-3 CAPLUS

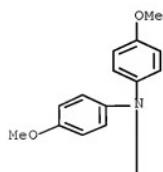
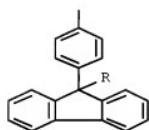
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis[N-[4'-[bis(4-methoxyphenyl)amino]-[1,1'-biphenyl]-4-yl]-

N',N'-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

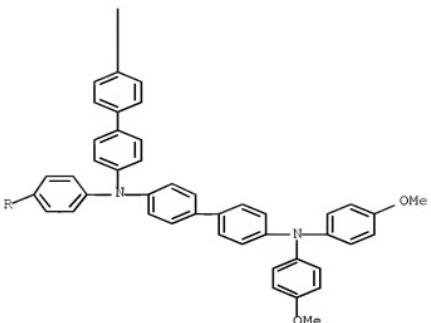
PAGE 1-A



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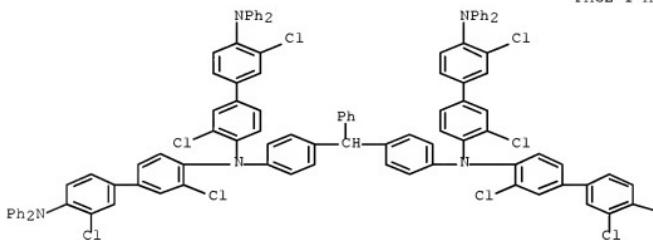
PAGE 3-A



RN 167218-80-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-[(phenylmethylene)di-4,1-phenylene]bis[3,3'-dichloro-N-[3,3'-dichloro-4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)

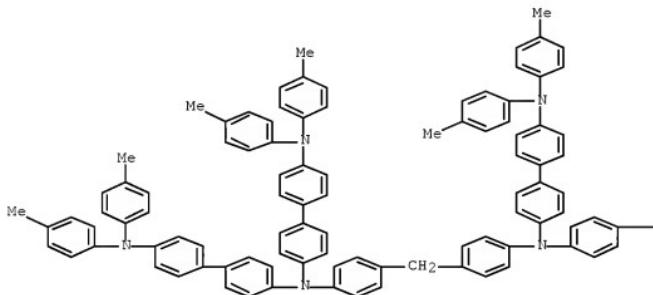
PAGE 1-A

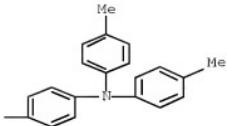


—NPh₂

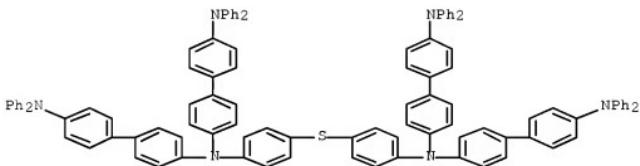
RN 167218-81-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(methylenedi-4,1-phenylene)bis[N-(4'-[bis(4-methylphenyl)amino]1,1'-biphenyl)-4-yl]-N',N'-bis(4-methylphenyl)-(9CI) (CA INDEX NAME)

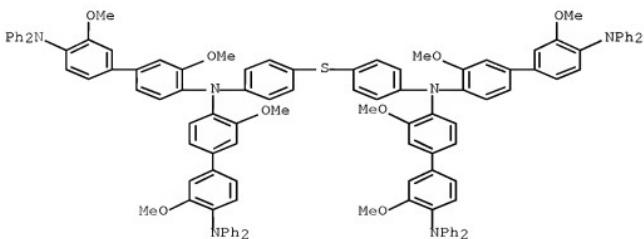




RN 167218-82-8 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(thiodi-4,1-phenylene)bis[N-(4'-(diphenylamino)-1,1'-biphenyl)-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)

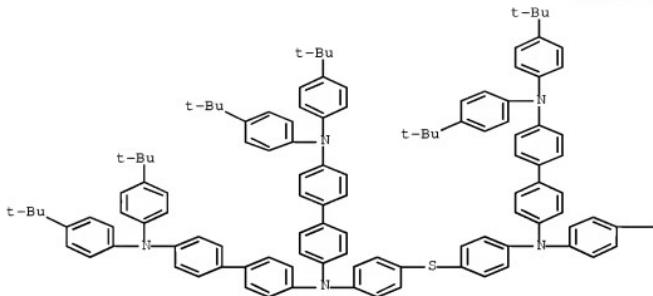


RN 167218-83-9 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(thiodi-4,1-phenylene)bis[N-(4'-
diphenylamino)-3,3'-dimethoxy[1,1'-biphenyl]-4-yl]-3,3'-dimethoxy-N',N'-
diphenyl (9CI) (CA INDEX NAME)

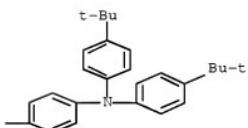


RN 167218-84-0 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(thiodi-4,1-phenylene)bis[N-[4'-(bis[4-(1,1-dimethylethyl)phenyl]amino)[1,1'-biphenyl]-4-yl]-N',N'-bis[4-(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)

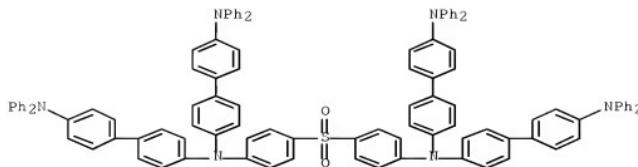
PAGE 1-A



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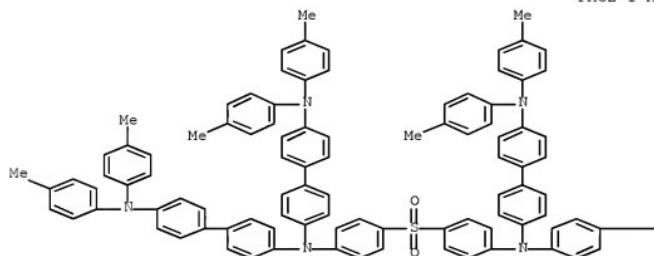
RN 167218-85-1 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(sulfonyldi-4,1-phenylene)bis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)



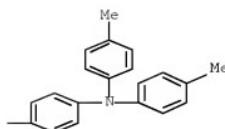
RN 167218-86-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(sulfonyldi-4,1-phenylene)bis[N-[4'-(bis(4-methylphenyl)amino)-[1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)-(9CI) (CA INDEX NAME)

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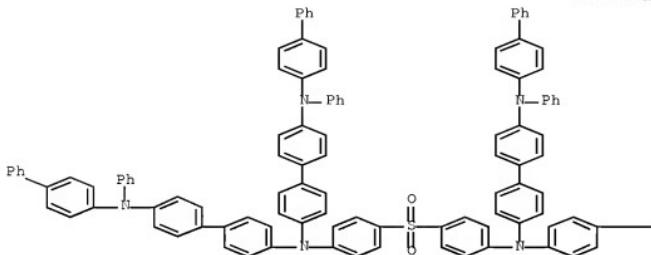
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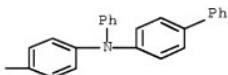
RN 167218-87-3 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(sulfonyldi-4,1-phenylene)bis[N'-(1,1'-biphenyl)-4-yl-N-[4'-(1,1'-biphenyl)-4-yl]phenylamino][1,1'-biphenyl]-4-yl]-N'-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



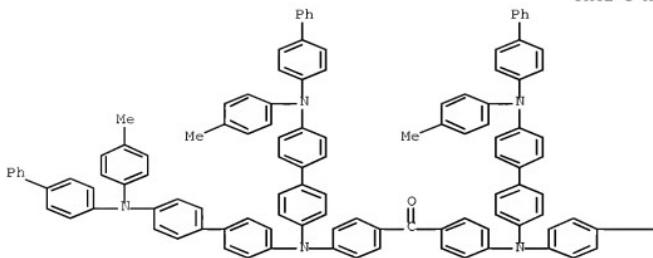
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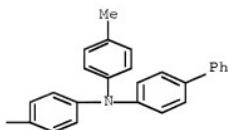
RN 167218-88-4 CAPLUS

CN Methanone, bis[4-[bis[4'-(1,1'-biphenyl)-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl]amino]phenyl- (CA INDEX NAME)

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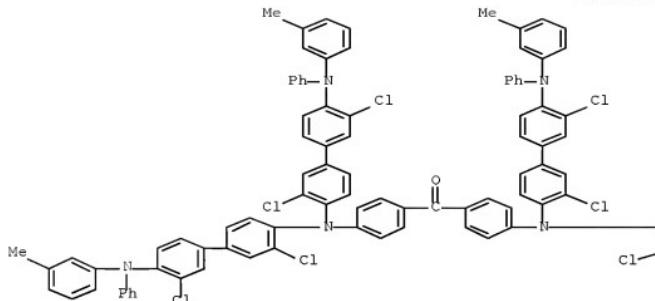
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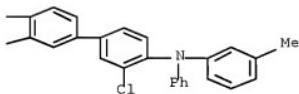
RN 167218-89-5 CAPLUS

CN Methanone, bis[4-[bis[3,3'-dichloro-4'-(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]aminolphenyl]- (CA INDEX NAME)

PAGE 1-A



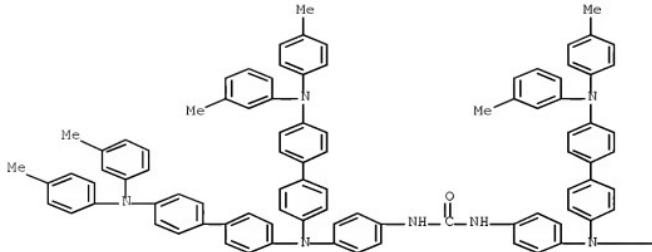
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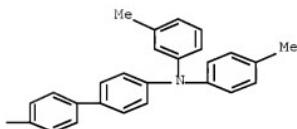
RN 167218-90-8 CAPLUS

CN Urea, N,N'-bis[4-[bis[4'-(3-methylphenyl)(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]amino]phenyl- (CA INDEX NAME)

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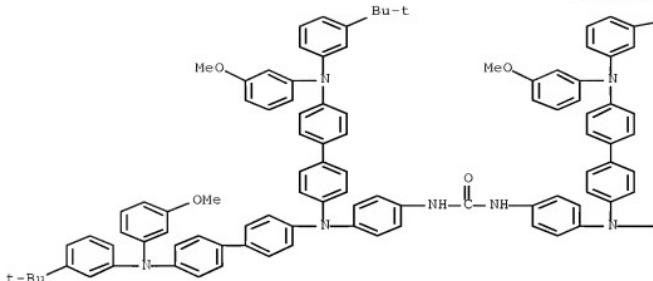
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RN 167218-91-9 CAPLUS

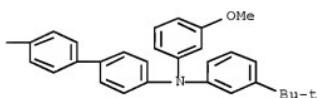
CN Urea, N,N'-bis[4-[bis[4'-(3-(1,1-dimethylethyl)phenyl](3-methoxyphenyl)amino][1,1'-biphenyl]-4-yl]amino]phenyl]- (CA INDEX NAME)

PAGE 1-A



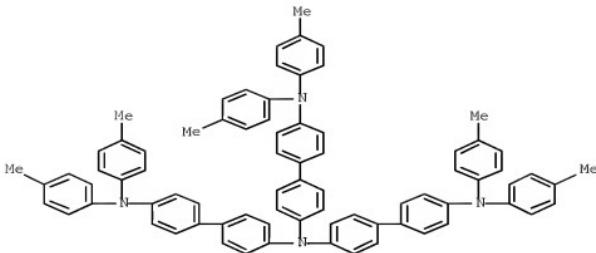
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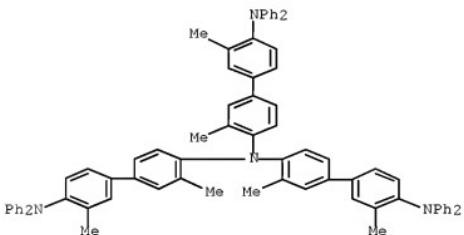
RN 167218-92-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(bis(4-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



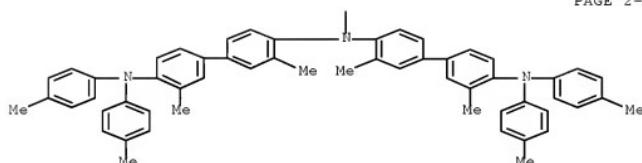
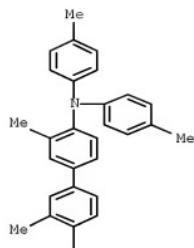
RN 167218-93-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(diphenylamino)-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N',N'-diphenyl- (9CI) (CA INDEX NAME)



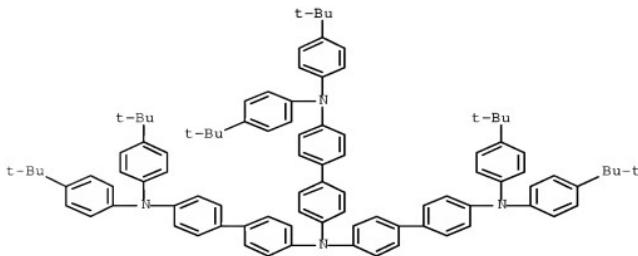
RN 167218-94-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(bis(4-methylphenyl)amino)-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N',N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 167218-95-3 CAPLUS

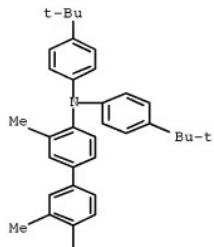
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



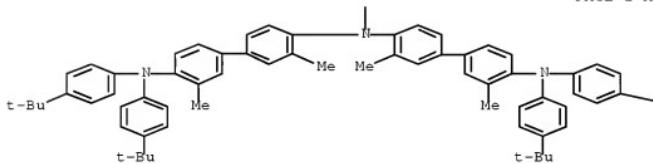
RN 167218-96-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(bis[4-(1,1-dimethylethyl)phenyl]amino)-3',3'-dimethyl-1[1',1'-biphenyl]-4-yl]-N4',N4'-bis[4-(1,1-dimethylethyl)phenyl]-3,3'-dimethyl- (CA INDEX NAME)

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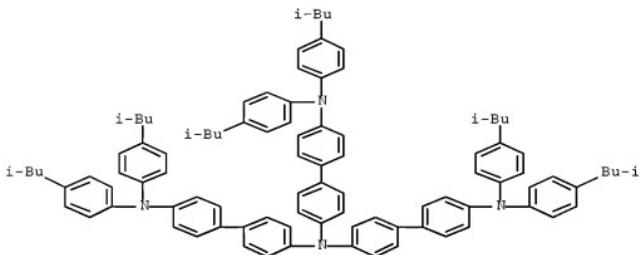
PAGE 2-A



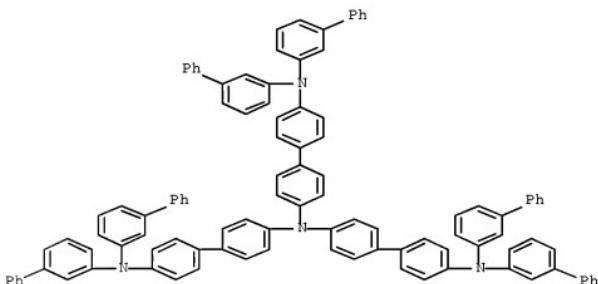
PAGE 2-B

-Bu-t

RN 167218-97-5 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(bis[4-(2-methylpropyl)phenyl]amino)[1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(2-methylpropyl)phenyl]- (CA INDEX NAME)

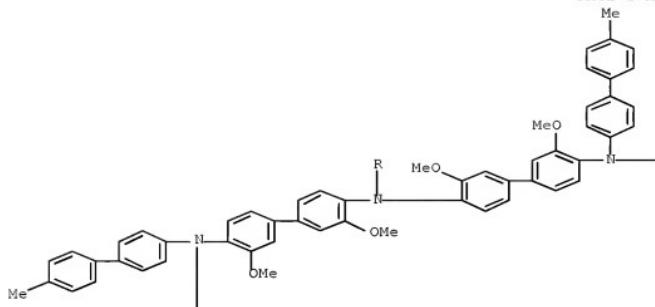


RN 167218-98-6 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis([1,1'-biphenyl]-3-yl)-N',N'-bis[4'-(bis([1,1'-biphenyl]-3-yl)amino)[1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)

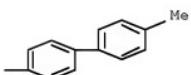


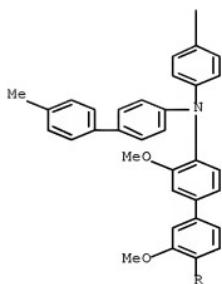
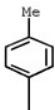
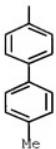
RN 167218-99-7 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(bis(4'-methyl[1,1'-biphenyl]-4-yl)amino)-3,3'-dimethoxy[1,1'-biphenyl]-4-yl]-3,3'-dimethoxy-N4',N4'-bis[4-(4'-methyl[1,1'-biphenyl]-4-yl)- (CA INDEX NAME)

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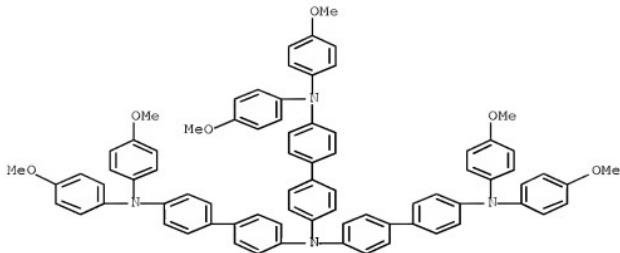
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RN 167219-00-3 CAPLUS

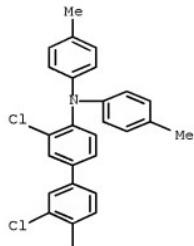
CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(bis(4-methoxyphenyl)amino)[1,1'-biphenyl]-4-yl]-N',N'-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



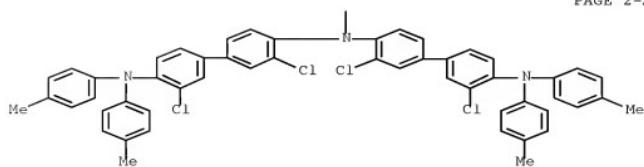
RN 167219-01-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(bis(4-methylphenyl)amino)-3,3'-dichloro[1,1'-biphenyl]-4-yl]-3,3'-dichloro-N',N'-bis(4-methylphenyl)-(9CI) (CA INDEX NAME)

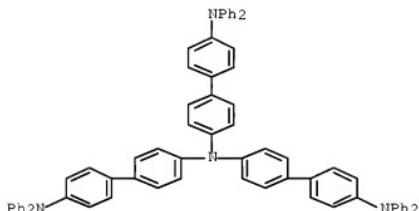
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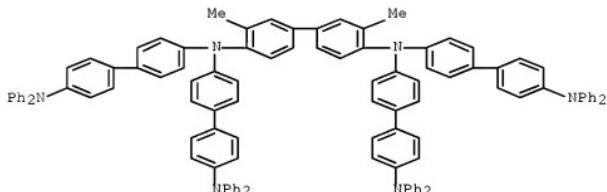
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IT 128396-99-6P 167218-41-9P 167218-42-0P
 167218-46-4P 167218-47-5P 167218-51-1P
 167218-52-2P 167218-53-3P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (amine compound as electron-transporting material for
 electroluminescent devices)
 RN 128396-99-6 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-(diphenylamino){1,1'-biphenyl}-
 4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)

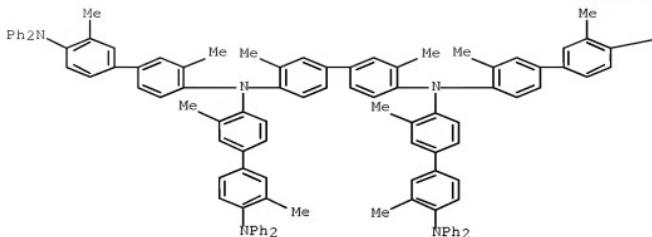


RN 167218-41-9 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino){1,1'-biphenyl}-4-yl]-3,3'-dimethyl- (CA INDEX NAME)



RN 167218-42-0 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)-3,3'-dimethyl{1,1'-biphenyl}-4-yl]-3,3'-dimethyl- (CA INDEX NAME)

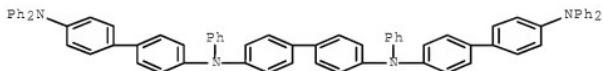
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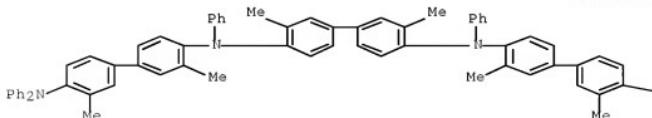
NPh2

RN 167218-46-4 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N₄,N_{4'}-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N₄,N_{4'}-diphenyl- (CA INDEX NAME)



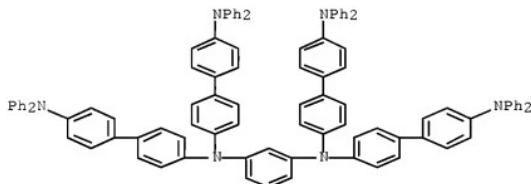
RN 167218-47-5 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N₄,N_{4'}-bis[4'-(diphenylamino)-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N₄,N_{4'}-diphenyl- (CA INDEX NAME)

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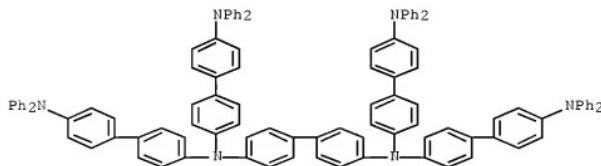


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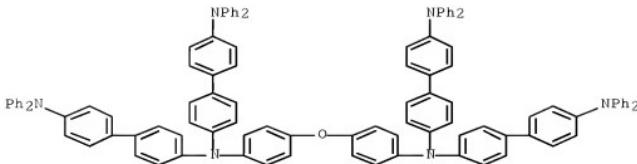
RN 167218-51-1 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-1,3-phenylenebis[N-[4'-(diphenylamino)(1,1'-biphenyl)-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)



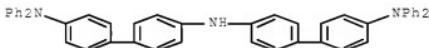
RN 167218-52-2 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)(1,1'-biphenyl)-4-yl]- (CA INDEX NAME)



RN 167218-53-3 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(oxydi-4,1-phenylene)bis[N-[4'-(diphenylamino)(1,1'-biphenyl)-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)



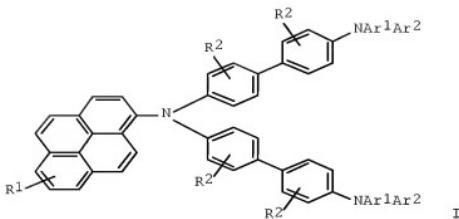
IT 167218-39-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (amine compound as electron-transporting material for electroluminescent devices)
 RN 167218-39-5 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N4'-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4,N4-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (18 CITINGS)

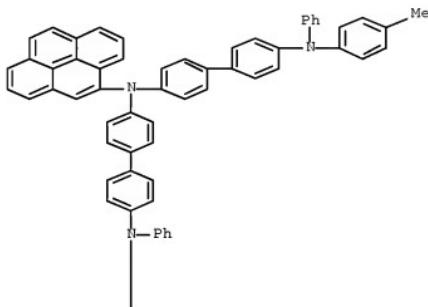
L7 ANSWER 321 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1995:767930 CAPLUS Full-text
 DOCUMENT NUMBER: 123:183055
 ORIGINAL REFERENCE NO.: 123:32305a,32308a
 TITLE: Field-effect electroluminescent device containing aminopyrene derivative
 INVENTOR(S): Tamoto, Nozomi; Nagai, Kazukyo; Adachi, Chihaya;
 Sakon, Hirota
 PATENT ASSIGNEE(S): Ricoh Kk, Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07157754	A	19950620	JP 1993-338934	19931202
PRIORITY APPLN. INFO.:			JP 1993-338934	A 19931202
			JP 1993-280541	19931014
OTHER SOURCE(S):	MARPAT 123:183055			
GI				



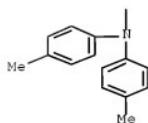
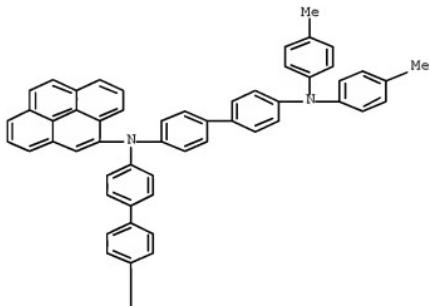
- AB The device has ≥1 organic compound layer containing an aminopyrene derivative I [R1-2 = H, halo, (substituted) alkyl, alkoxy, aryl; Ar1-2 = (substituted) aryl] between an anode and a cathode. The device showed stable luminescence.
- IT 167274-15-9 167274-16-0 167274-17-1
- RL: DEV (Device component use); USES (Uses)
(field-effect electroluminescent device containing aminopyrene derivative with stable luminescence)
- RN 167274-15-9 CAPLUS
- CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-methylphenyl)-N'-[4'-(4-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]-N-phenyl-N'-4-pyrenyl-(9CI) (CA INDEX NAME)

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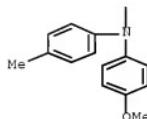
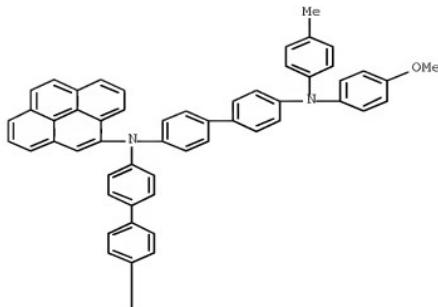




RN 167274-16-0 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-(bis(4-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)-N-4-pyrenyl- (9CI) (CA INDEX NAME)



RN 167274-17-1 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N4-(4-methoxyphenyl)-N4'-(4-[(4-methoxyphenyl)(4-methylphenyl)amino][1,1'-biphenyl]-4-yl)-N4-(4-methylphenyl)-N4'-4-pyrenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

L7 ANSWER 322 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1995:663074 CAPLUS [Full-text](#)
DOCUMENT NUMBER: 123:127048
ORIGINAL REFERENCE NO.: 123:22343a,22346a
TITLE: Electroluminescent element with oxadiazole derivative electron-transporting layer
INVENTOR(S): Nagai, Kazukyo; Adachi, Chihaya; Sakon, Hirota; Tamoto, Nozomi
PATENT ASSIGNEE(S): Ricoh Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07109454	A	19950425	JP 1993-280179	19931012
JP 3482446	B2	20031222		

PRIORITY APPLN. INFO.:

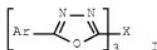
JP 1993-280179

19931012

OTHER SOURCE(S):

MARPAT 123:127048

GI



AB The title element has ≥ 1 organic compound layer, ≥ 1 of which contains an oxadiazole derivative I [Ar = (substituted) condensed polycyclic hydrocarbon, (substituted) aromatic heterocycle; X = trivalent group formed by removal of 3 H atoms from benzene ring], between an anode and a cathode. The organic compound layer may comprise ≥ 1 light-emitting layer and ≥ 1 electron-transporting layer, ≥ 1 of which contains I, optionally having ≥ 1 hole-transporting layer. The element showed bluish green emission with improved durability.

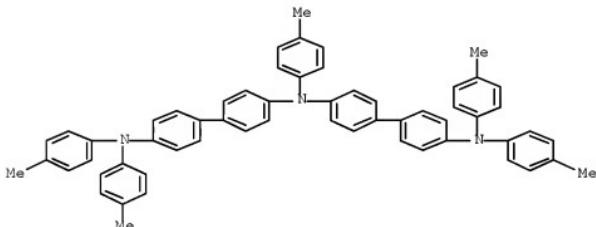
IT 134917-82-1

RL: DEV (Device component use); USES (Uses)

(hole-transporting layer; electroluminescent devices containing oxadiazole derivative electron-transporting layers)

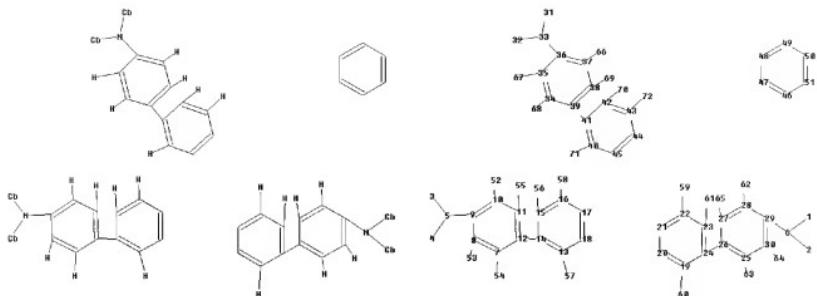
RN 134917-82-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-(bis(4-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N4,N4'-tris(4-methylphenyl)- (CA INDEX NAME)



=>

Uploading C:\Program Files\STNEXP\Queries\10594239#1.str



chain nodes :

1 2 3 4 5 6 31 32 33 52 53 54 55 56 57 58 59 60 61 62 63 64
65 66 67 68 69 70 71 72

ring nodes :

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51

chain bonds :

1-6 2-6 3-5 4-5 5-9 6-29 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58
19-60 22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 33-36 34-68

35-67 37-66

38-69 39-41 40-71 42-70 43-72

ring bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35

34-39 35-36

36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48

48-49 49-50

50-51

exact/norm bonds :

5-9 6-29 33-36

exact bonds :

1-6 2-6 3-5 4-5 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58 19-60
22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 34-68 35-67 37-66

38-69 39-41 40-71

42-70 43-72

normalized bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35

34-39 35-36

36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48

48-49 49-50

50-51

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS 6:CLASS 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:Atom 32:Atom
33:CLASS 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom
42:Atom 43:Atom

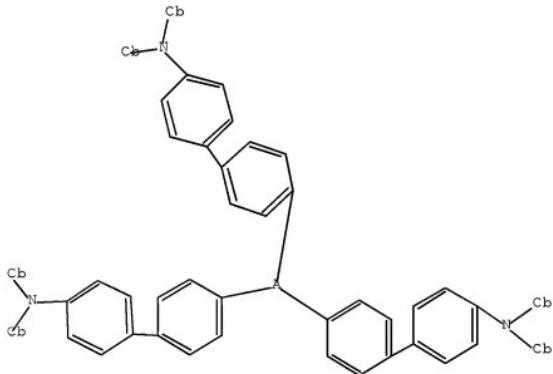
44:Atom 45:Atom 46:Atom 47:Atom 48:Atom 49:Atom 50:Atom 51:Atom 52:CLASS
53:CLASS 54:CLASS
55:CLASS 56:CLASS 57:CLASS 58:CLASS 59:CLASS 60:CLASS 61:CLASS 62:CLASS
63:CLASS 64:CLASS
65:CLASS 66:CLASS 67:CLASS 68:CLASS 69:CLASS 70:CLASS 71:CLASS 72:CLASS

Generic attributes :

1:
Saturation : Unsaturated
2:
Saturation : Unsaturated
3:
Saturation : Unsaturated
4:
Saturation : Unsaturated
31:
Saturation : Unsaturated
32:
Saturation : Unsaturated

L1 STRUCTURE UPLOADED

=> d 11
L1 HAS NO ANSWERS
L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> s 11
SAMPLE SEARCH INITIATED 10:57:41 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 1742 TO ITERATE

100.0% PROCESSED 1742 ITERATIONS
SEARCH TIME: 00.00.01

4 ANSWERS

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 32337 TO 37343
PROJECTED ANSWERS: 4 TO 200

L2 4 SEA SSS SAM L1

=> s 11 full
FULL SEARCH INITIATED 10:57:49 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 34591 TO ITERATE

100.0% PROCESSED 34591 ITERATIONS
SEARCH TIME: 00.00.01

47 ANSWERS

L3 47 SEA SSS FUL L1

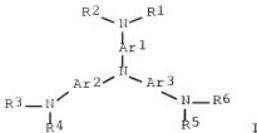
This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 13
L4 43 L3

=> d ibib abs hitstr 37-43

L4 ANSWER 37 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1997:480901 CAPLUS Full-text
DOCUMENT NUMBER: 127:115061
ORIGINAL REFERENCE NO.: 127:22069a,22072a
TITLE: Hole-transporating material and use thereof
INVENTOR(S): Tamano, Michiko; Okutsu, Satoshi; Enokida, Toshio
PATENT ASSIGNEE(S): Toyo Ink Manufacturing Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 32 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 779765	A2	19970618	EP 1996-309019	19961211
EP 779765	A3	19970730		
EP 779765	B1	20010801		
R: DE, FR, GB				
JP 09222741	A	19970826	JP 1996-306049	19961118
PRIORITY APPLN. INFO.:			JP 1995-321345	A 19951211
			JP 1996-306049	A 19961118
OTHER SOURCE(S):	MARPAT	127:115061		
GI				



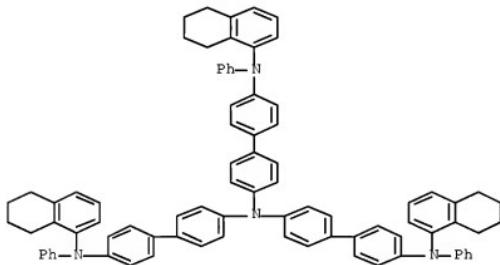
AB Hole-transporting materials comprise triaryl amines described by the general formula I (R1-6 = (un)substituted aryl groups; and Ar1-3 = (un)substituted arylene groups, with the restriction that ≥ 1 of R1-6 = comprises fused aromatic rings or is an aryl group having a cycloalkyl ring). Organic electroluminescent devices and electrophotog. photoreceptors employing the materials are also described.

IT 192181-14-9

RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (aryl amine hole-transporting materials and apparatus using them)

RN 192181-14-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-phenyl-N',N'-bis[4'-(phenyl(5,6,7,8-tetrahydro-1-naphthalenyl)amino)[1,1'-biphenyl]-4-yl]-N-(5,6,7,8-tetrahydro-1-naphthalenyl)- (9CI) (CA INDEX NAME)



L4 ANSWER 38 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:269788 CAPLUS [Full-text](#)

DOCUMENT NUMBER: 126:349527

ORIGINAL REFERENCE NO.: 126:67847a,67850a

TITLE: Thermal stability in oligomeric triphenylamine/tris(8-quinolinolato) aluminum electroluminescent devices

AUTHOR(S): Tokito, Shizuo; Tanaka, Hiromitsu; Noda, Koji; Okada, Akane; Taga, Yasunori

CORPORATE SOURCE: Toyota Central Research and Development Laboratories, Inc., Nagakute, 480-11, Japan

SOURCE: Applied Physics Letters (1997), 70(15), 1929-1931

CODEN: APPLAB; ISSN: 0003-6951

PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English

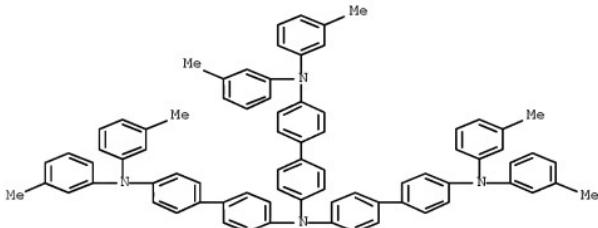
AB Thermal stability of the electroluminescent (EL) devices using various hole-transporting materials based on triphenylamine, and a typical emitting material, tris(8-quinolinolato) Al was systematically studied. The thermal stability of the EL devices is clearly seen to depend on the glass transition temperature (Tg) of the hole-transporting material. The highest thermal stability up to 155° was obtained in the device using the pentamer of triphenylamine. The linear linkage of triphenylamine is useful to attain high Tg rather than the branch linkage.

IT 189196-95-0

RL: DEV (Device component use); USES (Uses)
(thermal stability in oligomeric triphenylamine/tris(8-quinolinolato) aluminum electroluminescent devices)

RN 189196-95-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-(bis(3-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N4',N4'-bis(3-methylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 171 THERE ARE 171 CAPLUS RECORDS THAT CITE THIS RECORD (172 CITINGS)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 39 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:224293 CAPLUS Full-text

DOCUMENT NUMBER: 126:299493

ORIGINAL REFERENCE NO.: 126:57857a,57860a

TITLE: Thermal stability of electroluminescent devices fabricated using novel charge-transporting materials

AUTHOR(S): Tokito, Shizuo; Tanaka, Hiromitsu; Noda, Koji; Okada, Akane; Taga, Yasunori

CORPORATE SOURCE: Toyota Central Research and Development Laboratories Inc., Aichi, 480-11, Japan

SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1997), 38(1), 388-389

CODEN: ACPPAY; ISSN: 0032-3934

PUBLISHER: American Chemical Society, Division of Polymer Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

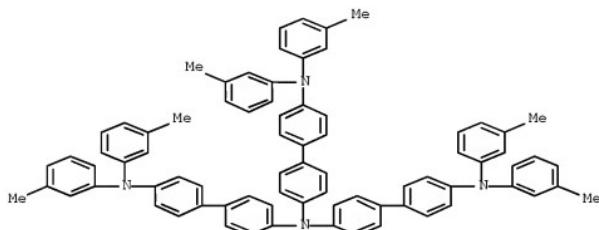
AB Novel electron- and hole-transporting materials for the electroluminescent devices are described. The basic structures of the hole-transporting materials are a linear or branch linkages of triphenylamine moiety. The electron-transporting materials are based on oxadiazole moiety with branched or twisted structures. The electroluminescent characteristics of these materials and devices based on them are also presented.

IT 189196-95-0

RL: DEV (Device component use); PRP (Properties); USES (Uses)
(thermal stability of electroluminescent devices fabricated using novel charge-transporting materials)

RN 189196-95-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(bis(3-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N4',N4'-bis(3-methylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD
(6 CITINGS)

L4 ANSWER 40 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:90283 CAPLUS Full-text

DOCUMENT NUMBER: 126:111013

ORIGINAL REFERENCE NO.: 126:21331a,21334a

TITLE: Electrophotographic photoconductor containing tetramine or hexamine

INVENTOR(S): Tomyama, Hiromitsu; Ihara, Ikuko; Watanabe, Takanobu; Anzai, Mitsutoshi

PATENT ASSIGNEE(S): Hodogaya Chemical Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

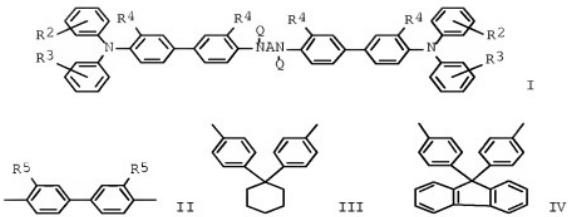
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08292586	A	19961105	JP 1995-119066	19950421
PRIORITY APPLN. INFO.:			JP 1995-119066	19950421
OTHER SOURCE(S):	MARPAT	126:111013		

GI



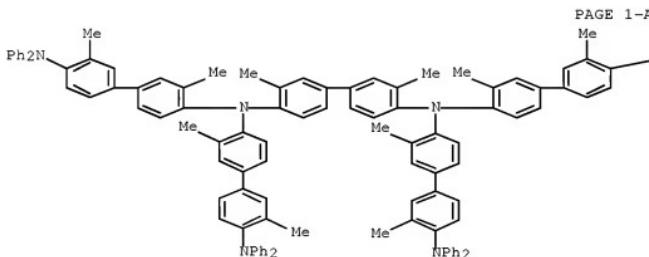
AB The photoconductor contains tetramine I [$\text{Q} = \text{R1C}_6\text{H}_4$; $\text{R1-3} = \text{H}$, lower alkyl, lower alkoxy, (substituted) phenyl; $\text{R4} = \text{H}$, lower alkyl, lower alkoxy, Cl; $\text{A} = \text{m-C}_6\text{H}_4$, $\text{p-C}_6\text{H}_4$, 9,10-anthracenediyl, II, naphthalenediyl, III, IV, $\text{p-C}_6\text{H}_4\text{-p-XC}_6\text{H}_4$; $\text{R5} = \text{H}$, lower alkyl, lower alkoxy, Cl; $\text{X} = \text{CH}_2$, CHPh , O, S] as charge-transporting agent. The photoconductor shows good heat resistance, prevention of crystallization, high sensitivity, and good durability.

IT 167218-42-0F

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(charge-transporting agent; electrophotog. photoconductor containing tetramine or hexamine as charge-transporting agent)

RN 167218-42-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl- (CA INDEX NAME)



PAGE 1-B

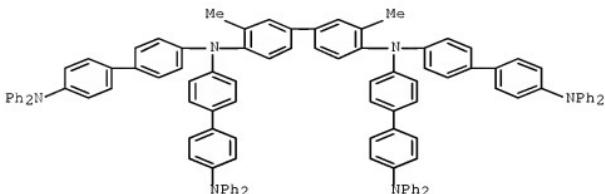
—NPh₂

IT 167218-41-9

RL: TEM (Technical or engineered material use); USES (Uses)
(charge-transporting agent; electrophotog. photoconductor containing
tetramine or hexamine as charge-transporting agent)

RN 167218-41-9 CAPLUS

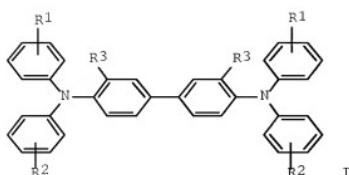
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-
(diphenylamino)] [1,1'-biphenyl]-4-yl]-3,3'-dimethyl- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD
(1 CITINGS)

L4 ANSWER 41 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1996:740336 CAPLUS Full-text
DOCUMENT NUMBER: 126:39393
ORIGINAL REFERENCE NO.: 126:7708h,7709a
TITLE: Electroluminescent device
INVENTOR(S): Fukuyama, Masao; Suzuki, Mutsumi; Murakami, Mutsuaki
PATENT ASSIGNEE(S): Matsushita Electric Ind Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08259934	A	19961008	JP 1995-60749	19950320
JP 3449020	B2	20030922		
PRIORITY APPLN. INFO.:			JP 1995-60749	19950320
OTHER SOURCE(S):	MARPAT	126:39393		
GI				



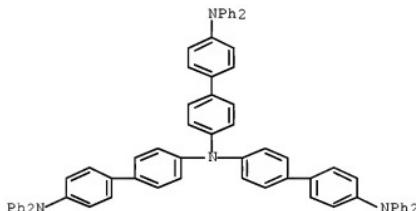
AB An electroluminescent device, suited for use in display devices, comprises a light-emitting layer placed next to a mixed layer which is composed of amine compds. and the light-emitting material used in the light-emitting layer, wherein the amine compound is represented by I (R1, R2 = H, Ph, lower mol. weight alkyl or alkoxy group substituted Ph, lower mol. weight alkyl and alkoxy groups; R3 = H, Me, methoxy, and Cl; one of R1 and R2 is iso-Bu, sec-Bu, tert-Bu, Ph, lower mol. weight alkyl substituted Ph, or lower mol. weight alkoxy substituted phenyl).

IT 128396-99-6 167218-52-2 167218-75-9
167218-95-3 167218-97-5 184033-65-6

RL: DEV (Device component use); USES (Uses)
(hole transport material for electroluminescent device)

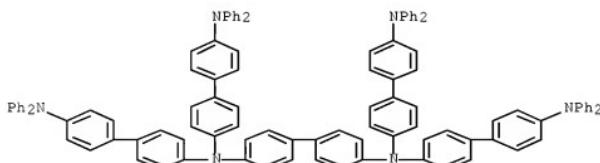
RN 128396-99-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)



RN 167218-52-2 CAPLUS

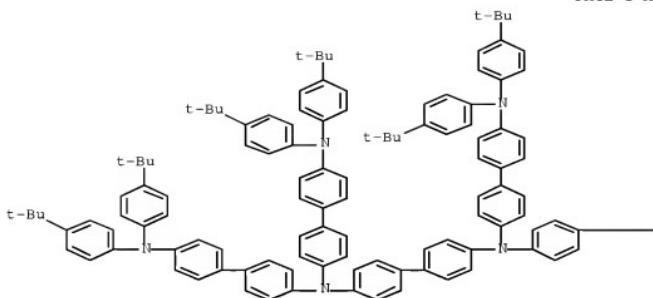
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



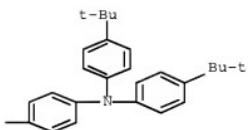
RN 167218-75-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(bis[4-(1,1-dimethylethyl)phenyl]amino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

PAGE 1-A

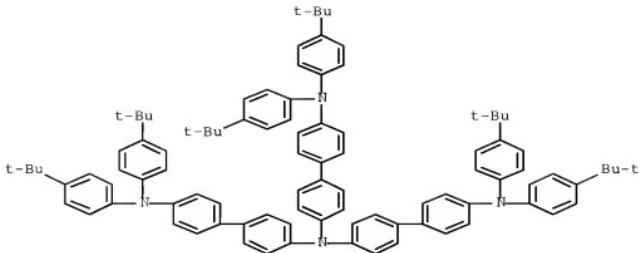


PAGE 1-B



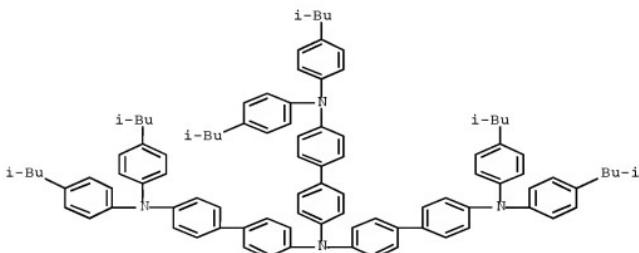
RN 167218-95-3 CAPLUS

CN [1,1'-Biphenyl]-4',4"-diamine, N4,N4'-bis[4'-(bis[4-(1,1-dimethylethyl)phenyl]amino)[1,1'-biphenyl]-4-y1]-N4',N4"-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



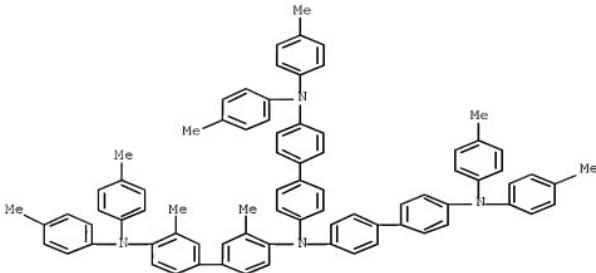
RN 167218-97-5 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(bis[4-(2-methylpropyl)phenyl]amino)[1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(2-methylpropyl)phenyl]- (CA INDEX NAME)



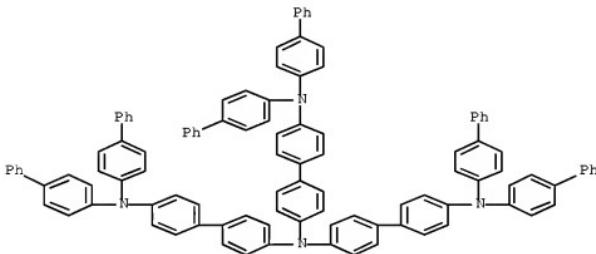
RN 184033-65-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(bis(4-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N4',N4'-bis(4-methylphenyl)- (CA INDEX NAME)



RN 184033-66-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis([1,1'-biphenyl]-4-yl)-N4',N4'-bis[4'-(bis([1,1'-biphenyl]-4-yl)amino)[1,1'-biphenyl]-4-yl] - (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD
(2 CITINGS)

L4 ANSWER 42 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1995:769803 CAPLUS Full-text

DOCUMENT NUMBER: 123:183664

ORIGINAL REFERENCE NO.: 123:32405a,32408a

TITLE: Amine compound and electro-luminescence device comprising same.

INVENTOR(S): Tomiyama, Hiromitsu; Oshino, Masahiko; Nakanishi, Naoko; Suzuki, Mutsumi; Fukuyama, Masao; Murakami, Mutsuaki; Nambu, Taro

PATENT ASSIGNEE(S): Hodogaya Chemical Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.

SOURCE: Eur. Pat. Appl., 98 pp.

CODEN: EPXXDW

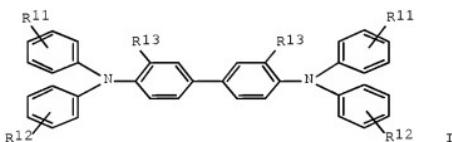
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 650955	A1	19950503	EP 1994-117206	19941031
EP 650955	B1	19980819		
R: DE, FR, GB				
JP 07126615	A	19950516	JP 1993-273883	19931101
JP 3194657	B2	20010730		
JP 07126225	A	19950516	JP 1993-293800	19931101
JP 3574860	B2	20041006		
JP 07126226	A	19950516	JP 1993-293801	19931101
JP 3220950	B2	20011022		
JP 2001273978	A	20011005	JP 2001-49489	19931101
JP 3529735	B2	20040524		
JP 07331238	A	19951219	JP 1994-132744	19940615
JP 08003122	A	19960109	JP 1994-155470	19940615
JP 08100172	A	19960416	JP 1994-236622	19940930
JP 3274939	B2	20020415		
JP 2001181240	A	20010703	JP 2000-332663	20001031
JP 3567323	B2	20040922		
JP 2002343577	A	20021129	JP 2002-83871	20020325
JP 3745296	B2	20060215		
JP 2004182740	A	20040702	JP 2004-21884	20040129
JP 3880967	B2	20070214		

PRIORITY APPLN. INFO.:	JP 1993-273883	A 19931101
	JP 1993-293800	A 19931101
	JP 1993-293801	A 19931101
	JP 1994-132744	A 19940615
	JP 1994-155470	A 19940615
	JP 1994-236622	A 19940930
	JP 2001-49489	A3 19931101

OTHER SOURCE(S): MARPAT 123:183664
GI



- AB Novel amine compds. useful as electron-transporting materials to be incorporated in organic electro-luminescence (EL) devices are described, e.g., having the formula I [R1, R2 = H, alkyl, alkoxy, Ph, alkylphenyl, alkoxyphenyl, with the proviso that ≥ 1 of R1 and R2 is n-Bu, i-Bu, sec-Bu, tert-Bu, Ph, alkoxyphenyl, alkylphenyl; R3 = H, alkyl, alkoxy, Cl]. Five more Markush structures are given. The organic EL device can find wide application in various display units, requires a low applied voltage and exhibits a high luminance and an excellent stability.
- IT 167218-75-9 167218-92-0 167218-93-1

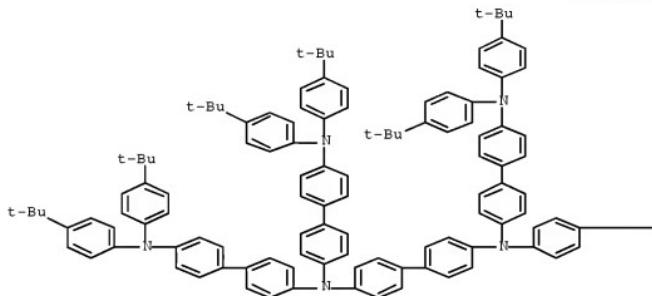
167218-94-2 167218-95-3 167218-96-4
167218-97-5 167218-98-6 167218-99-7
167219-00-3 167219-01-4

RL: DEV (Device component use); USES (Uses)
(amine compound as electron-transporting material for electroluminescent devices)

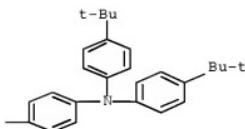
RN 167218-75-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(bis[4-(1,1-dimethylethyl)phenyl]amino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

PAGE 1-A

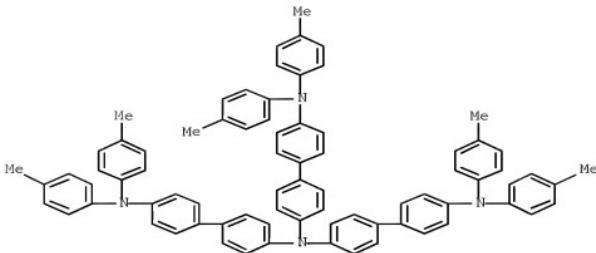


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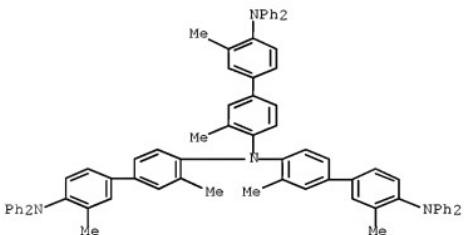
RN 167218-92-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(bis(4-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



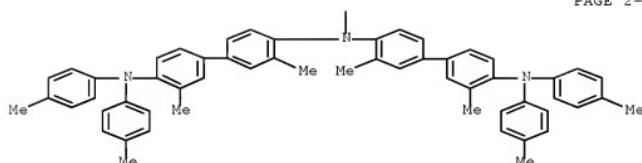
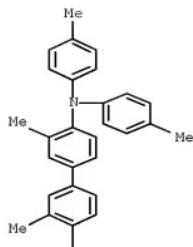
RN 167218-93-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(diphenylamino)-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N',N'-diphenyl- (9CI) (CA INDEX NAME)



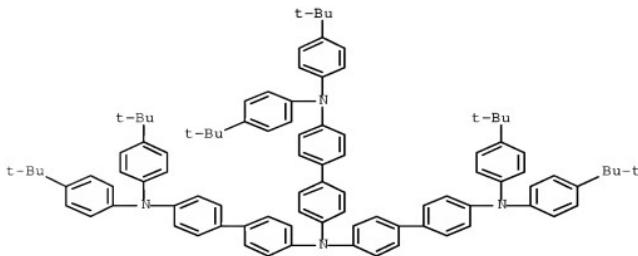
RN 167218-94-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(bis(4-methylphenyl)amino)-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N',N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 167218-95-3 CAPLUS

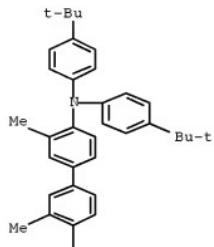
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



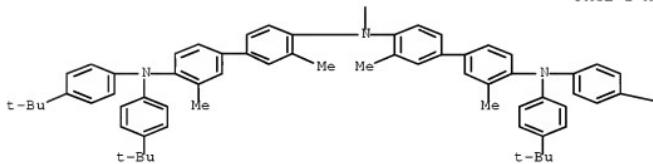
RN 167218-96-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(bis[4-(1,1-dimethylethyl)phenyl]amino)-3',3'-dimethyl-1[1',1'-biphenyl]-4-yl]-N4',N4'-bis[4-(1,1-dimethylethyl)phenyl]-3,3'-dimethyl- (CA INDEX NAME)

PAGE 1-A



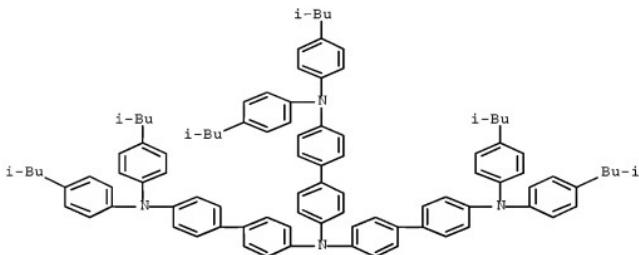
PAGE 2-A



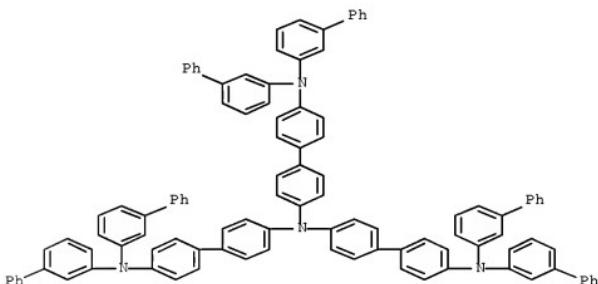
PAGE 2-B

-Bu-t

RN 167218-97-5 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(bis[4-(2-methylpropyl)phenyl]amino)[1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(2-methylpropyl)phenyl]- (CA INDEX NAME)

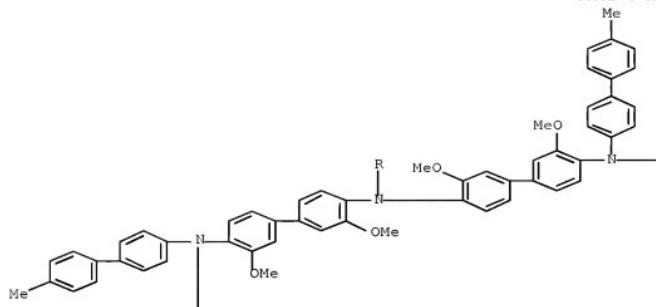


RN 167218-98-6 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis([1,1'-biphenyl]-3-yl)-N',N'-bis[4'-(bis([1,1'-biphenyl]-3-yl)amino)[1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)

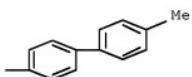


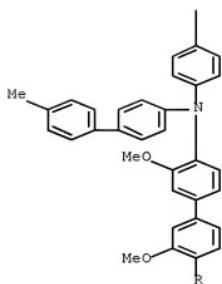
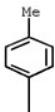
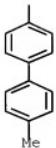
RN 167218-99-7 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(bis(4'-methyl[1,1'-biphenyl]-4-yl)amino)-3,3'-dimethoxy[1,1'-biphenyl]-4-yl]-3,3'-dimethoxy-N4',N4'-bis[4-(4'-methyl[1,1'-biphenyl]-4-yl)- (CA INDEX NAME)

PAGE 1-A



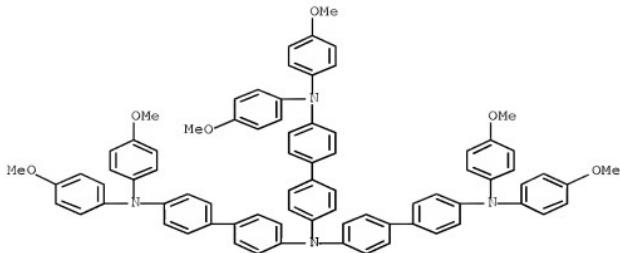
PAGE 1-B





RN 167219-00-3 CAPLUS

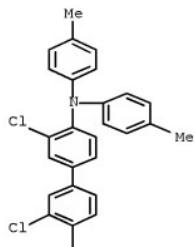
CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(bis(4-methoxyphenyl)amino)[1,1'-biphenyl]-4-yl]-N',N'-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



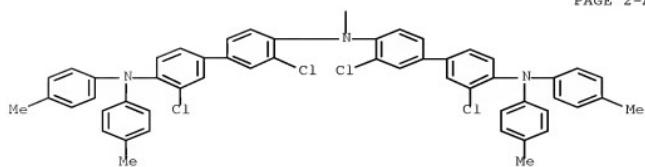
RN 167219-01-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(bis(4-methylphenyl)amino)-3,3'-dichloro[1,1'-biphenyl]-4-yl]-3,3'-dichloro-N',N'-bis(4-methylphenyl)-(9CI) (CA INDEX NAME)

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PAGE 2-A

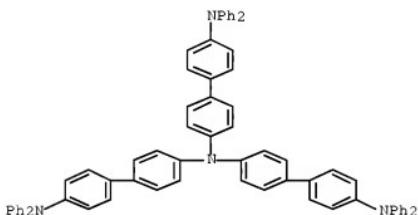


IT 128396-99-6P 167218-41-9P 167218-42-0P
167218-52-2P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(amine compound as electron-transporting material for electroluminescent devices)

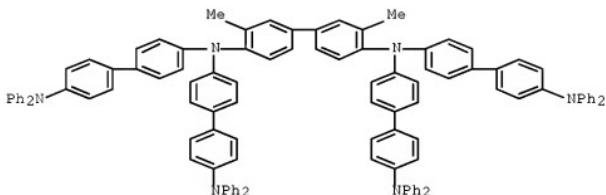
RN 128396-99-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N₄,N₄-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N_{4'},N_{4'}-diphenyl- (CA INDEX NAME)



RN 167218-41-9 CAPLUS

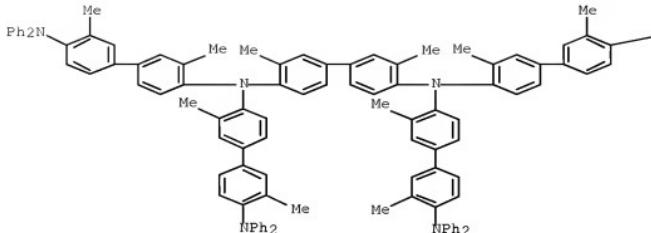
CN [1,1'-Biphenyl]-4,4'-diamine, N₄,N₄,N_{4'},N_{4'}-tetrakis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-3,3'-dimethyl- (CA INDEX NAME)



RN 167218-42-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N₄,N₄,N_{4'},N_{4'}-tetrakis[4'-(diphenylamino)-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl- (CA INDEX NAME)

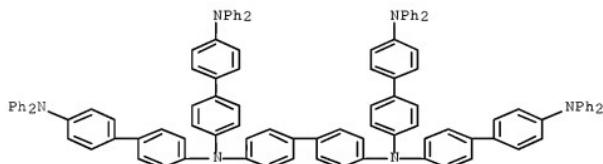
PAGE 1-A



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—NPh2

RN 167218-52-2 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-(CA INDEX NAME)



OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (18 CITINGS)

L4 ANSWER 43 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1990:468357 CAPLUS [Full-text](#)
DOCUMENT NUMBER: 113:68357
ORIGINAL REFERENCE NO.: 113:11381a,11384a
TITLE: Electrophotographic photoreceptors using amine charge-transporting agent
INVENTOR(S): Sakakibara, Teigo; Sakai, Kiyoshi; Sako, Shunkai; Amamiya, Shoji
PATENT ASSIGNEE(S): Canon K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent

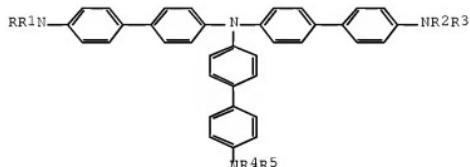
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01281453	A	19891113	JP 1988-111250	19880507
JP 04054226	B	19920828		
US 4920022	A	19900424	US 1989-345236	19890501
PRIORITY APPLN. INFO.:				
			JP 1988-111250	A 19880507
			JP 1988-111255	A 19880507

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 113:68357

G1



1

AB Electrophotog. photoreceptors showing good sensitivity and cyclicability have a layer containing an amine [I; R-R5 = (substituted) alkyl, aralkyl or aryl]. Thus, an Al sheet was coated with a composition containing Lionol Blue NCB Toner (β -type Cu phthalocyanine) and Polyester Adhesive 49,000 (polyester resin) and overcoated with a composition containing I (R, R1 = Me; R2-R5 = Ph) and Parelite K-1300 (polycarbonate resin) to give a photoreceptor.

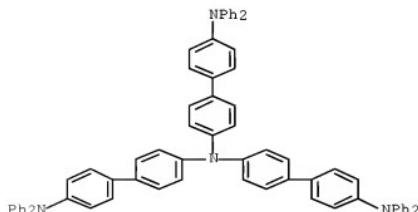
and Panites 138386-88-6

BL: USES (Uses)

(charge transporting agent, for electrophotog. photoreceptors)

BN 128396-99-6 SARII-II

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4'.N4!-diphenyl- (CA INDEX NAME)



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L4 ANSWER 32 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1998:398346 CAPLUS Full-text
DOCUMENT NUMBER: 129:87816
ORIGINAL REFERENCE NO.: 129:17967a,17970a
TITLE: Material for organoelectroluminescence device and
organoelectroluminescence device using the material
INVENTOR(S): Tamano, Michiko; Onikubo, Toshikazu; Okutsu, Satoshi;
Enokida, Toshio
PATENT ASSIGNEE(S): Toyo Ink Manufacturing Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 26 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 848579	A2	19980617	EP 1997-310157	19971216
EP 848579	A3	19980902		
EP 848579	B1	20030326		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IB, SI, LT, LV, FI, RO				
JP 10233287	A	19980902	JP 1997-301457	19971104
JP 3606025	B2	20050105		
US 5948941	A	19990907	US 1997-990193	19971212
PRIORITY APPLN. INFO.:			JP 1996-335217	A 19961216
			JP 1997-301457	A 19971104

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 129:87816

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Compds. suitable for use in electroluminescent devices are described by such general formula as I (A= Q, Q1, Q2; Ar1-6 = independently selected (un)substituted aryl groups; X1-6 = independently selected O, S, C:O, SO2, Si(B1)B2, N(B1), P(B1), F(:O)B1-, -(CH2)x-O-(CH2)y-, (un)substituted alkylene groups, or (un)substituted alicyclic moietys; B1 and B2 = independently selected (un)substituted alkyl group or a (un)substituted aryl group, etc. The materials may be hole-injecting materials. Devices using the materials, including display devices, are also described, as is the use of the materials in the devices.

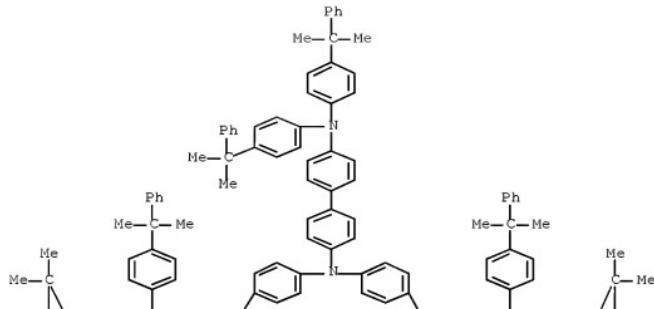
IT 209165-19-5 209165-20-8 209165-21-9

RL: DEV (Device component use); USES (Uses)

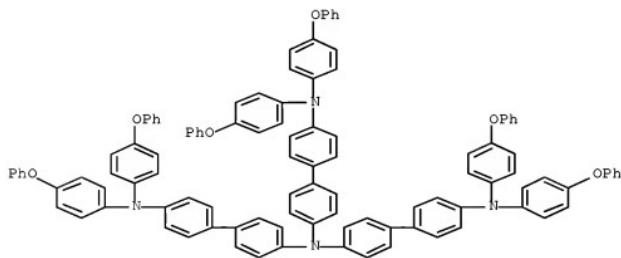
(materials for organic electroluminescent devices based on benzene and triphenylamine derivs. and devices using them)

RN 209165-19-5 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-(bis[4-(1-methyl-1-phenylethyl)phenyl]amino)[1,1'-biphenyl]-4-yl]-N-[4'-(bis[4-(1-methyl-1-phenylethyl)phenyl]amino)[1,1'-biphenyl]-4-yl]-N',N'-bis[4-(1-methyl-1-phenylethyl)phenyl]- (9CI) (CA INDEX NAME)



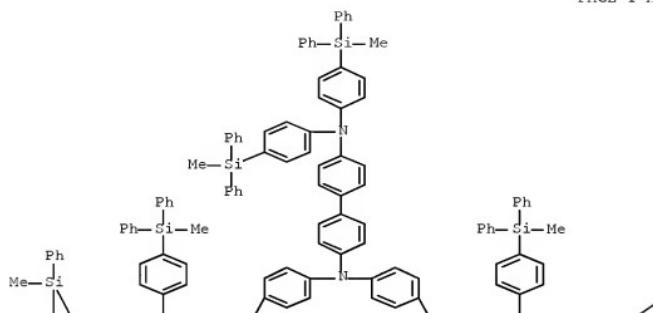
RN 209165-20-8 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(bis(4-phenoxyphenyl)amino)]{1,1'-biphenyl}-4-yl]-N',N'-bis(4-phenoxyphenyl)- (9CI) (CA INDEX NAME)



RN 209165-21-9 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(bis[4-

(methyldiphenylsilyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(methyldiphenylsilyl)phenyl]- (CA INDEX NAME)

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OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD
(6 CITINGS)

L4 ANSWER 33 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1998:389245 CAPLUS Full-text
 DOCUMENT NUMBER: 129:87837
 ORIGINAL REFERENCE NO.: 129:17971a,17974a
 TITLE: Triarylamine derivative hole-transporting agent and
 its use in electroluminescent device and
 electrophotographic photoreceptor
 INVENTOR(S): Tamano, Michiko; Okutsu, Satoshi; Enokida, Toshio
 PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10158642	A	19980616	JP 1996-321261	19961202
JP 3575198	B2	20041013		

PRIORITY APPLN. INFO.: MARPAT 129:87837

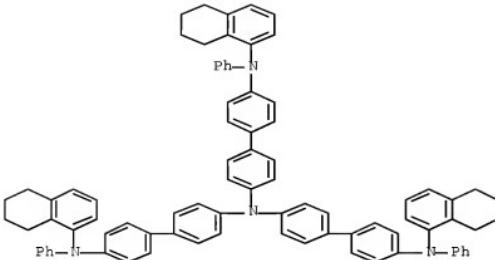
OTHER SOURCE(S): AB The hole-transporting agent is a triarylamine derivative
 $N(Ar1NR1R2)(Ar2NR3R4)(Ar3NR5R6)$ [I; R1-6 = (substituted) aryl; Ar1-3 =
 (substituted) arylene]. The electroluminescent device has a I-containing
 layer, preferably a hole-injection layer or a light-emitting layer. The
 electrophotog. photoreceptor contains I and a charge-generating agent. I
 gives electroluminescent devices with high emission, efficiency, and long
 service life and electrophotog. photoreceptors with high sensitivity and
 durability in repeated use.

IT 192181-14-9

RL: DEV (Device component use); TEM (Technical or engineered material
 use); USES (Uses)
 (triarylamine derivative hole-transporting agent used in electroluminescent
 device and electrophotog. photoreceptor)

RN 192181-14-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-phenyl-N',N'-bis[4'-(phenyl(5,6,7,8-
 tetrahydro-1-naphthalenyl)amino)[1,1'-biphenyl]-4-yl]-N-(5,6,7,8-
 tetrahydro-1-naphthalenyl)- (9CI) (CA INDEX NAME)



L4 ANSWER 34 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1998:282344 CAPLUS Full-text

DOCUMENT NUMBER: 129:10595

ORIGINAL REFERENCE NO.: 129:2211a,2214a

TITLE: Photoconductive imaging member

INVENTOR(S): Hu, Nan-xing; Liu, Ping; Ong, Beng S.

PATENT ASSIGNEE(S): Xerox Corp., USA

SOURCE: U.S., 17 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5747205	A	19980505	US 1997-807487	19970227
JP 10312073	A	19981124	JP 1998-47123	19980227
JP 4111406	B2	20080702		
JP 2008031167	A	20080214	JP 2007-188152 US 1997-807487 US 1997-807510 JP 1998-47123	20070719 A 19970227 A 19970227 A3 19980227
PRIORITY APPLN. INFO.:				

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 129:10595

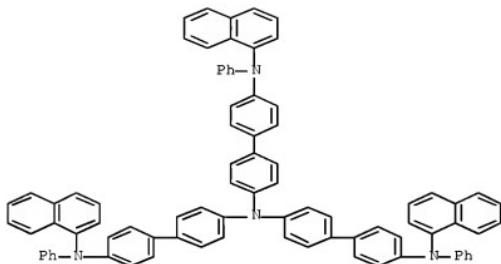
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

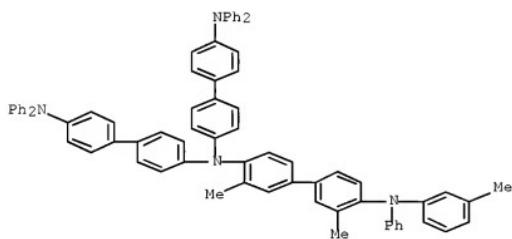
AB A photoconductive imaging member comprises a starburst aromatic amine compound of the formula N(A1Ra)(A2Rb)A3Rc wherein A1-3 independently represent biaryl; Ra, Rb, and Rc independently represent one of the groups of the formulas NAr1Ar2, I, and II wherein Ar1 and Ar2 independently represent aryl; R1-8 independently represent hydrogen, halogens, hydrocarbon groups, and alkoxy, and X represents oxygen, sulfur, or alkylene.

IT 207447-37-3 207447-41-4 207447-43-6
207447-44-7

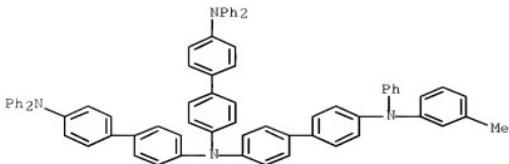
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(electrophotog. photoreceptors containing)
RN 207447-37-8 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N4-1-naphthalenyl-N4',N4'-bis[4'-(1-naphthalenylphenylamino){1,1'-biphenyl}-4-yl]-N4-phenyl- (CA INDEX NAME)



RN 207447-41-4 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino){1,1'-biphenyl}-4-yl]-3,3'-dimethyl-N4'-(3-methylphenyl)-N4'-phenyl- (CA INDEX NAME)

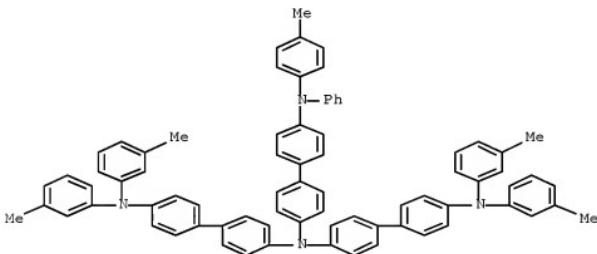


RN 207447-43-6 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino){1,1'-biphenyl}-4-yl]-N4'-(3-methylphenyl)-N4'-phenyl- (CA INDEX NAME)



RN 207447-44-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(bis(3-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N'-(4-methylphenyl)-N'-phenyl- (9CI) (CA INDEX NAME)

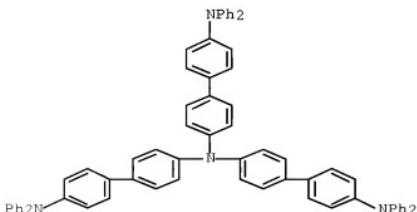


IT 128396-99-6P 207447-28-7P 207447-31-2P

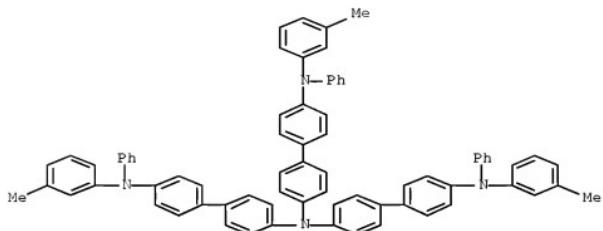
RL: DEV (Device component use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (preparation and use in electrophotog. photoreceptors)

RN 128396-99-6 CAPLUS

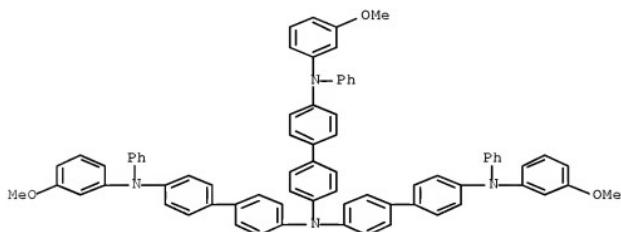
CN [1,1'-Biphenyl]-4,4'-diamine, N₄,N₄'-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N₄',N₄'-diphenyl- (CA INDEX NAME)



RN 207447-28-7 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N-(3-methylphenyl)-N'-bis[4'-(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]-N-phenyl- (9CI) (CA INDEX NAME)



RN 207447-31-2 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N-(3-methoxyphenyl)-N'-bis[4'-(3-methoxyphenyl)phenylamino][1,1'-biphenyl]-4-yl]-N-phenyl- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD
(2 CITINGS)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 35 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1997:760094 CAPLUS [Full-text](#)
DOCUMENT NUMBER: 128:41004
ORIGINAL REFERENCE NO.: 128:7927a, 7930a
TITLE: Thermal stability of organic electroluminescent
devices fabricated using novel charge transporting
materials
AUTHOR(S): Tokito, Shizuo; Tanaka, Hiromitsu; Noda, Koji; Okada,

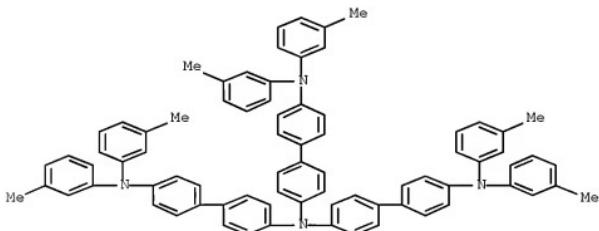
Akane; Taga, Yasunori
CORPORATE SOURCE: Toyota Central Research Development Laboratories,
Inc., Aichi, 480, Japan
SOURCE: Macromolecular Symposia (1997), Volume Date 1998,
125(Organic Light-Emitting Materials and Devices),
181-188
CODEN: MSYMEC; ISSN: 1022-1360
PUBLISHER: Huethig & Wepf Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Novel hole and electron transporting materials were synthesized to improve the thermal stability of organic electroluminescent (EL) devices. Mol. structures of such hole and electron transporting materials were designed based on triphenylamine (TPA) and oxadiazole (OXD) moieties, resp. The resulting materials have high glass transition temps. (T_g) over 100° and the vacuum-deposited thin films are significantly thermally stable. For the 2-layer EL devices using the novel hole transporting materials and the typical emitting material, tris(8-quinolinolato) Al, the thermal stability was clearly seen to depend on the T_g of the hole transporting material; excellent thermal stability was achieved. For the 3-layer EL device using the novel electron transporting material, good emission efficiency and good stability were achieved. The electron transporting materials were also applied to the polymeric system with polyvinylcarbazole matrix.

IT 189196-95-0
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(glass transition temperature and electroluminescent efficiency of hole transport material)

RN 189196-95-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-(bis(3-methylphenyl)amino)[1,1'-biphenyl]-4-yl]-N4',N4'-bis(3-methylphenyl)- (CA INDEX NAME)



L4 ANSWER 36 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:670115 CAPLUS [Full-text](#)

DOCUMENT NUMBER: 127:352802

ORIGINAL REFERENCE NO.: 127:69047a,69050a

TITLE: Organic electroluminescent elements and manufacture thereof

INVENTOR(S): Fukuyama, Masao; Suzuki, Mutsumi; Murakami, Mutsuaki

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE:

Patent

LANGUAGE:

Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09266070	A	19971007	JP 1996-73524	19960328
JP 3473258	B2	20031202		

PRIORITY APPLN. INFO.:

JP 1996-73524 19960328

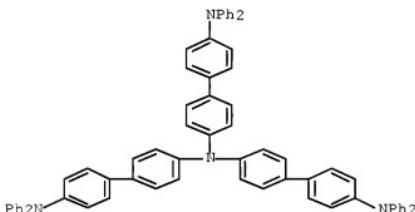
AB The elements comprise: a glass substrate; an ITO electrode stripe array .dblvert. X; an hole-transporting amine derivative layer (glass transition temperature T = Tg) heat treated at T > Tg; a tris(8-quinolinolato)aluminum phosphor layer; and an Al/Li electrode stripe array .dblvert. Y.

IT 128396-99-6

RL: DEV (Device component use); USES (Uses)
(manufacture of organic electroluminescent elements containing hoe-
transporting
amine derivs.)

RN 128396-99-6 CAPLUS

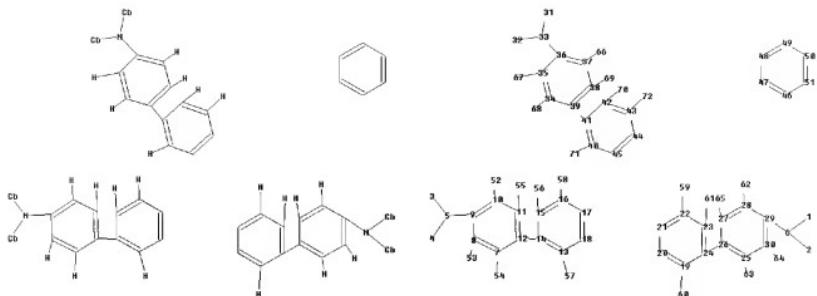
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino)[1,1'-biphenyl]-
4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)



<http://www.cas.org/support/stndoc/properties.html>

=>

Uploading C:\Program Files\STNEXP\Queries\10594239#1.str



chain nodes :

1 2 3 4 5 6 31 32 33 52 53 54 55 56 57 58 59 60 61 62 63 64
65 66 67 68 69 70 71 72

ring nodes :

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51

chain bonds :

1-6 2-6 3-5 4-5 5-9 6-29 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58
19-60 22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 33-36 34-68

35-67 37-66

38-69 39-41 40-71 42-70 43-72

ring bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35

34-39 35-36

36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48

48-49 49-50

50-51

exact/norm bonds :

5-9 6-29 33-36

exact bonds :

1-6 2-6 3-5 4-5 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58 19-60
22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 34-68 35-67 37-66

38-69 39-41 40-71

42-70 43-72

normalized bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35

34-39 35-36

36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48

48-49 49-50

50-51

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS 6:CLASS 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom
31:Atom 32:Atom
33:CLASS 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom
42:Atom 43:Atom

44:Atom 45:Atom 46:Atom 47:Atom 48:Atom 49:Atom 50:Atom 51:Atom 52:CLASS
53:CLASS 54:CLASS
55:CLASS 56:CLASS 57:CLASS 58:CLASS 59:CLASS 60:CLASS 61:CLASS 62:CLASS
63:CLASS 64:CLASS
65:CLASS 66:CLASS 67:CLASS 68:CLASS 69:CLASS 70:CLASS 71:CLASS 72:CLASS
Generic attributes :
1:
Saturation : Unsaturated
2:
Saturation : Unsaturated
3:
Saturation : Unsaturated
4:
Saturation : Unsaturated
31:
Saturation : Unsaturated
32:
Saturation : Unsaturated

L5 STRUCTURE uploaded

=> d 15
L5 HAS NO ANSWERS
L5 STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.

=> s 15
SAMPLE SEARCH INITIATED 11:02:12 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 1350 TO ITERATE

100.0% PROCESSED 1350 ITERATIONS 9 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 24796 TO 29204
PROJECTED ANSWERS: 9 TO 360

L6 9 SEA SSS SAM L5

=> s 15 full
FULL SEARCH INITIATED 11:02:21 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 27357 TO ITERATE

100.0% PROCESSED 27357 ITERATIONS 203 ANSWERS
SEARCH TIME: 00.00.01

L7 203 SEA SSS FUL L5

=> s 17
L8 130 L7

=> s 18 and electrolumin?

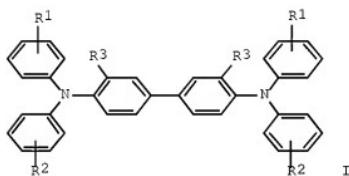
108605 ELECTROLUMIN?

L9 84 L8 AND ELECTROLUMIN?

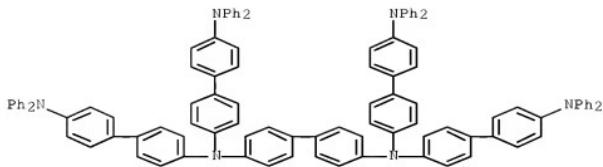
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L9 ANSWER 80 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1996:740336 CAPLUS Full-text
DOCUMENT NUMBER: 126:39393
ORIGINAL REFERENCE NO.: 126:7708h,7709a
TITLE: Electroluminescent device
INVENTOR(S): Fukuyama, Masao; Suzuki, Mutsumi; Murakami, Mutsuaki
PATENT ASSIGNEE(S): Matsushita Electric Ind Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08259934	A	19961008	JP 1995-60749	19950320
JP 3449020	B2	20030922		
PRIORITY APPLN. INFO.:			JP 1995-60749	19950320
OTHER SOURCE(S):	MARPAT	126:39393		
GI				

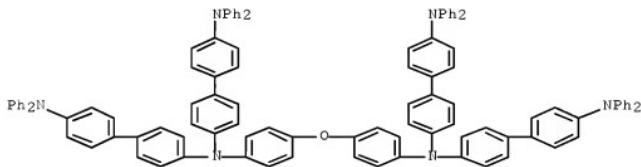


- AB An electroluminescent device, suited for use in display devices, comprises a light-emitting layer placed next to a mixed layer which is composed of amine compds. and the light-emitting material used in the light-emitting layer, wherein the amine compound is represented by I (R1, R2 = H, Ph, lower mol. weight alkyl or alkoxy group substituted Ph, lower mol. weight alkyl and alkoxy groups; R3 = H, Me, methoxy, and Cl; one of R1 and R2 is iso-Bu, sec-Bu, tert-Bu, Ph, lower mol. weight alkyl substituted Ph, or lower mol. weight alkoxy substituted phenyl).
- IT 167218-52-2 167218-53-3 167218-75-9
184033-66-7 184033-67-8 184033-68-9
RL: DEV (Device component use); USES (Uses)
(hole transport material for electroluminescent device)
- RN 167218-52-2 CAPLUS
- CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-(CA INDEX NAME)



RN 167218-53-3 CAPLUS

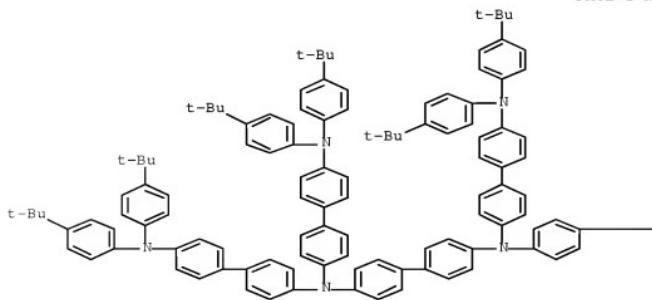
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(oxydi-4,1-phenylene)bis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)

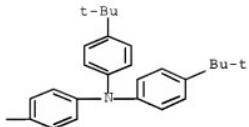


RN 167218-75-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N₄,N₄',N₄'-tetrakis[4'-(bis[4-(1,1-dimethylethyl)phenyl]amino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

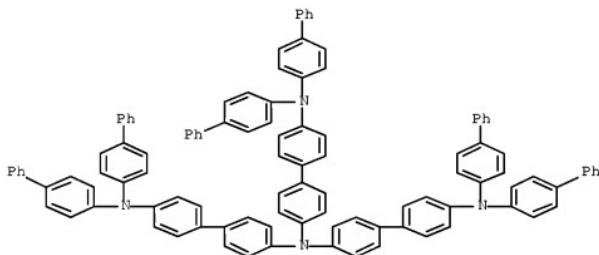
PAGE 1-A





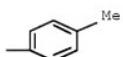
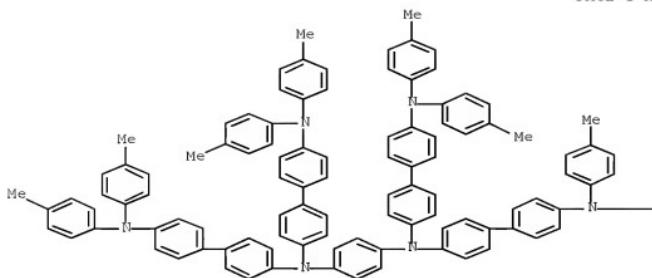
RN 184033-66-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis([1,1'-biphenyl]-4-yl)-N4',N4'-bis[4'-(bis([1,1'-biphenyl]-4-yl)amino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

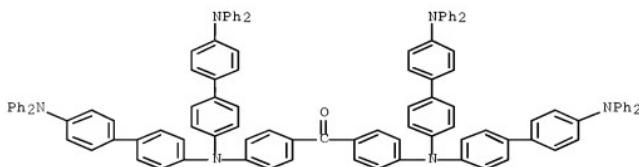


RN 184033-67-8 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-1,4-phenylenebis[N-(4'-(bis(4-methylphenyl)amino)[1,1'-biphenyl]-4-yl)-N',N'-bis(4-methylphenyl)- (CA INDEX NAME)



RN 184033-68-9 CAPLUS
 CN Methanone, bis[4-[bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]aminolphenyl]-
 (CA INDEX NAME)



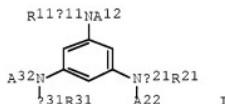
OS.CITING REF COUNT:

2

THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD
(2 CITINGS)

L9 ANSWER 81 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1996:273378 CAPLUS Full-text
 DOCUMENT NUMBER: 124:302069
 ORIGINAL REFERENCE NO.: 124:55735a,55738a
 TITLE: Organic electroluminescent device
 INVENTOR(S): Shirota, Yasuhiko; Nakatani, Kenji; Inoe, Tetsuji;
 Nanba, Noryoshi
 PATENT ASSIGNEE(S): TDK Electronics Co., Ltd., Japan; TDK Corp.
 SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08048974	A	19960220	JP 1994-207970	19940809
JP 3471910	B2	20031202		
PRIORITY APPLN. INFO.:			JP 1994-207970	19940809
OTHER SOURCE(S):	MARPAT	124:302069		
GI				



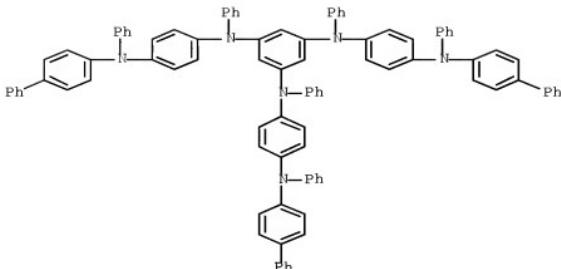
AB The organic electroluminescent device comprises a layer containing electron injection/transport compound and trisarylaminobenzene represented by I [Φ 11, Φ 21, and Φ 31 = divalent aromatic residue; R11, R21, and R31 = N Φ 01 Φ 02, NH Φ 01, NR01 Φ 01, Φ 01, O Φ 01 or S Φ 01; Φ 01, Φ 02 = monovalent aromatic residue; R01 = alkyl; one of R01, R02, and R03 = N Φ 01 Φ 02, NH Φ 01, or NR01 Φ 01; A12, A22, and A32 = monovalent aromatic residue, alkyl, or H].

IT 162879-23-4

RL: DEV (Device component use); USES (Uses)
 (organic electroluminescent device having layer containing
 trisarylaminobenzene derivative)

RN 162879-23-4 CAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-((1,1'-biphenyl)-4-ylphenylamino)phenyl]-N1,N3,N5-triphenyl- (CA INDEX NAME)



L9 ANSWER 82 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1996:101045 CAPLUS Full-text

DOCUMENT NUMBER: 124:188998

ORIGINAL REFERENCE NO.: 124:34719a, 34722a

TITLE: Organic electroluminescent material and
luminous device therefrom

INVENTOR(S): Tamano, Michiko; Onikubo, Shunichi; Enokida, Toshio

PATENT ASSIGNEE(S): Toyo Ink Mfg Co, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07316549	A	19951205	JP 1994-106715	19940520
PRIORITY APPLN. INFO.:			JP 1994-106715	19940520
OTHER SOURCE(S):	MARPAT	124:188998		

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

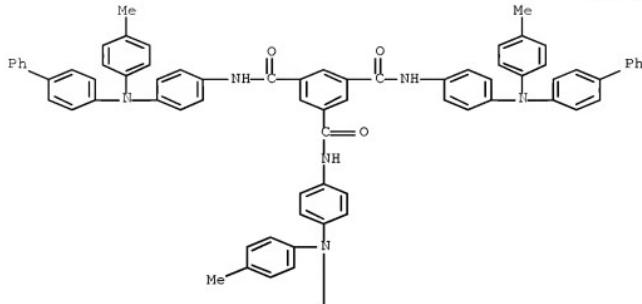
AB The material represented by I [R1-12 = H, halo, alkyl, cyano, NO₂, ester, NH₂, monosubstituted or disubstituted amino, acylamino, OH, alkoxy, SH, alkyloxy, alkylthio, aryloxy, arylthio, siloxy, acyl, cycloalkyl, carbamoyl, CO₂H, SO₃H, imide, (un)substituted aliphatic group, (un)substituted alicyclic group, (un)substituted carbocyclic aromatic group, (un)substituted heterocyclic aromatic group, (un)substituted heterocyclic group; adjacent R1-12 may form (un)substituted alicyclic group, (un)substituted carbocyclic aromatic group, (un)substituted heterocyclic aromatic group, (un)substituted heterocyclic group]. The device has ≥1 layer containing the material or a hole-injection layer containing the material.

IT 174084-82-3

RL: DEV (Device component use); USES (Uses)
(electroluminescent device containing triphenylamine derivative of

trimesic acid with high luminance and luminescent efficiency)
RN 174084-82-3 CAPLUS
CN 1,3,5-Benzenetricarboxamide, N1,N3,N5-tris[4-[(1,1'-biphenyl)-4-yl(4-methylphenyl)amino]phenyl]- (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

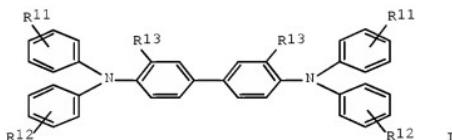


L9 ANSWER 83 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1995:769803 CAPLUS [Full-text](#)
DOCUMENT NUMBER: 123:183664
ORIGINAL REFERENCE NO.: 123:32405a,32408a
TITLE: Amine compound and electro-luminescence device comprising same.
INVENTOR(S): Tomiyama, Hiromitsu; Oshino, Masahiko; Nakanishi, Naoko; Suzuki, Mutsumi; Fukuyama, Masao; Murakami, Mutsuaki; Nambu, Taro
PATENT ASSIGNEE(S): Hodogaya Chemical Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.
SOURCE: Eur. Pat. Appl., 98 pp.
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 650955	A1	19950503	EP 1994-117206	19941031
EP 650955	B1	19980819		
R: DE, FR, GB				
JP 07126615	A	19950516	JP 1993-273883	19931101
JP 3194657	B2	20010730		
JP 07126225	A	19950516	JP 1993-293800	19931101
JP 3574860	B2	20041006		
JP 07126226	A	19950516	JP 1993-293801	19931101
JP 3220950	B2	20011022		
JP 2001273978	A	20011005	JP 2001-49489	19931101
JP 3529735	B2	20040524		
JP 07331238	A	19951219	JP 1994-132744	19940615
JP 08003122	A	19960109	JP 1994-155470	19940615
JP 08100172	A	19960416	JP 1994-236622	19940930
JP 3274939	B2	20020415		
JP 2001181240	A	20010703	JP 2000-332663	20001031
JP 3567323	B2	20040922		
JP 2002343577	A	20021129	JP 2002-83871	20020325
JP 3745296	B2	20060215		
JP 2004182740	A	20040702	JP 2004-21884	20040129
JP 3880967	B2	20070214		
PRIORITY APPLN. INFO.:				
			JP 1993-273883	A 19931101
			JP 1993-293800	A 19931101
			JP 1993-293801	A 19931101
			JP 1994-132744	A 19940615
			JP 1994-155470	A 19940615
			JP 1994-236622	A 19940930
			JP 2001-49489	A3 19931101

OTHER SOURCE(S):
GI

MARPAT 123:183664



AB Novel amine compds. useful as electron-transporting materials to be incorporated in organic electro-luminescence (EL) devices are described, e.g., having the formula I [R1, R2 = H, alkyl, alkoxy, Ph, alkylphenyl, alkoxyphenyl, with the proviso that ≥ 1 of R1 and R2 is n-Bu, i-Bu, sec-Bu, tert-Bu, Ph, alkoxyphenyl, alkylphenyl; R3 = H, alkyl, alkoxy, Cl]. Five more Markush structures are given. The organic EL device can find wide application in various display units, requires a low applied voltage and exhibits a high luminance and an excellent stability.

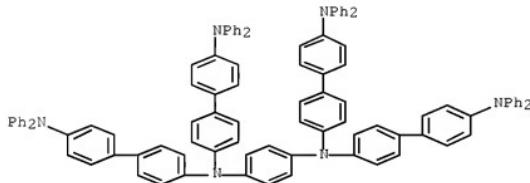
IT 167218-73-7 167218-75-9 167218-76-0
167218-77-1 167218-78-2 167218-79-3

167218-81-7 167218-82-8 167218-84-0
167218-85-1 167218-86-2 167218-87-3
167218-88-4 167218-90-8 167218-91-9
167218-98-6 167218-99-7

RL: DEV (Device component use); USES (Uses)
(amine compound as electron-transporting material for
electroluminescent devices)

RN 167218-73-7 CAPLUS

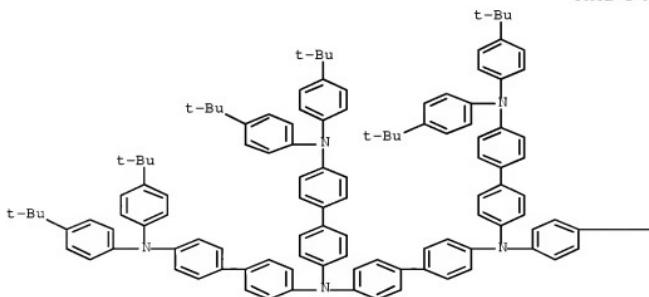
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-1,4-phenylenebis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)

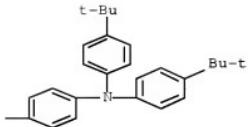


RN 167218-75-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(bis[4-(1,1-dimethylethyl)phenyl]amino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

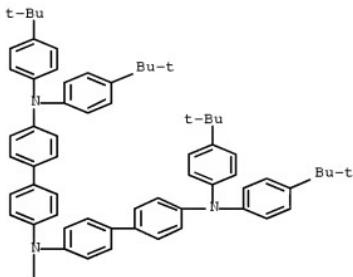
PAGE 1-A



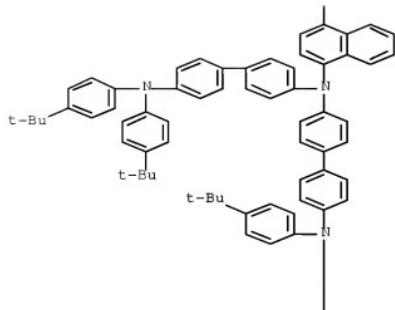


RN 167218-76-0 CAPLUS

CN 1,4-Naphthalenediamine, N1,N1,N4,N4-tetrakis[4'-(bis[4-(1,1-dimethylethyl)phenyl]amino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



PAGE 2-A

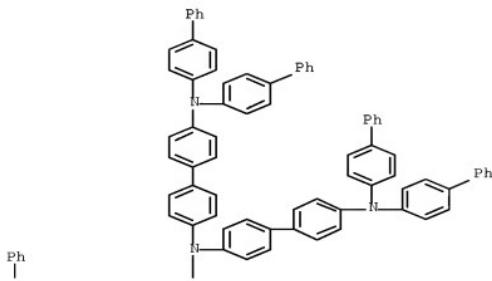


PAGE 3-A

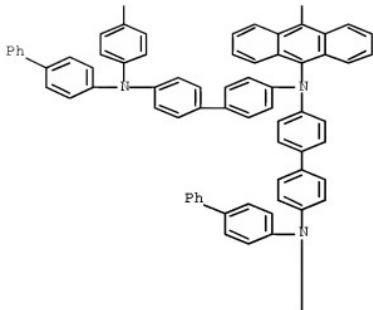


RN 167218-77-1 CAPLUS
CN 9,10-Anthracenediamine, N9,N9,N10,N10-tetrakis[4'-[bis([1,1'-biphenyl]-4-yl)amino][1,1'-biphenyl]-4-yl] (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

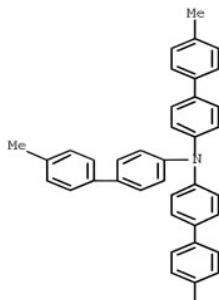


PAGE 3-A

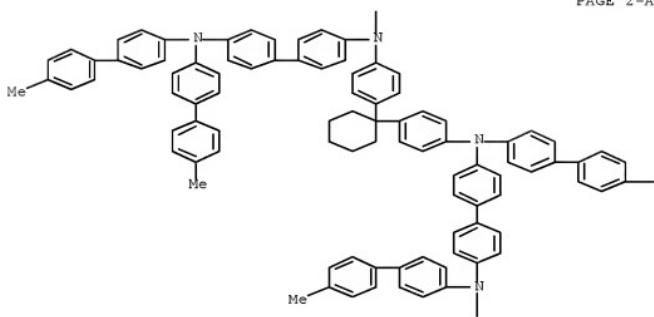


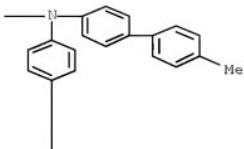
RN 167218-78-2 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(cyclohexylidenedi-4,1-phenylene)bis[N-[4'-[bis(4'-methyl[1,1'-biphenyl]-4-yl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(4'-methyl[1,1'-biphenyl]-4-yl)- (9CI) (CA INDEX NAME)

PAGE 1-A



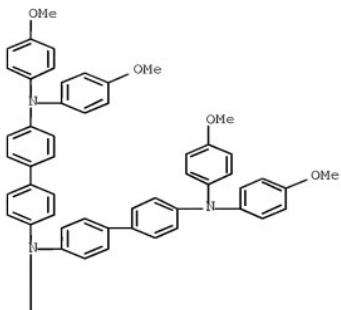
PAGE 2-A



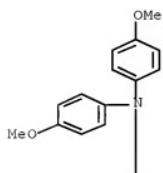
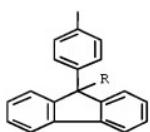


RN 167218-79-3 CAPLUS
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis[N-(4'-(bis(4-methoxyphenyl)amino)-[1,1'-biphenyl]-4-yl)-N',N'-bis(4-methoxyphenyl)-(9CI) (CA INDEX NAME)

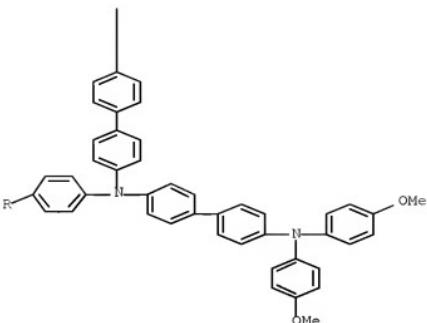
PAGE 1-A



PAGE 2-A



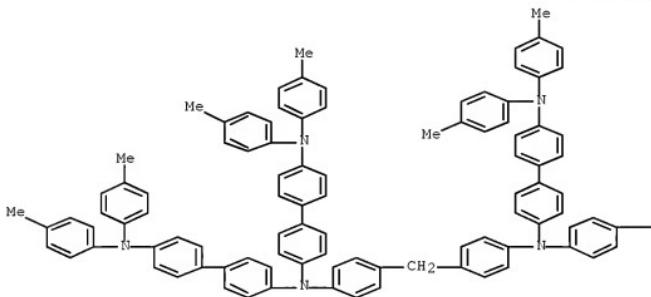
PAGE 3-A

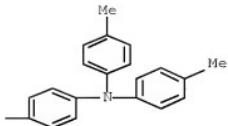


RN 167218-81-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(methylenedi-4,1-phenylene)bis[N-(4'-[bis(4-methylphenyl)amino](1,1'-biphenyl)-4-yl)-N',N'-bis(4-methylphenyl)-(9CI) (CA INDEX NAME)

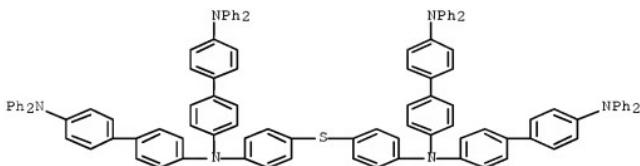
PAGE 1-A





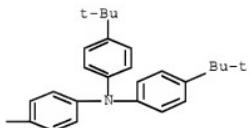
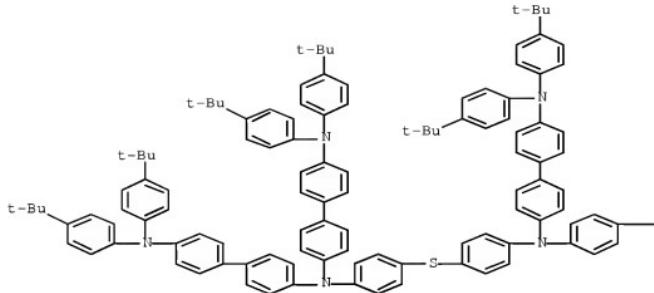
RN 167218-82-8 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(thiodi-4,1-phenylene)bis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)



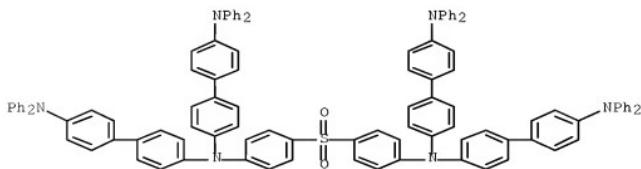
RN 167218-84-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(thiodi-4,1-phenylene)bis[N-[4'-(bis[4-(1,1-dimethylethyl)phenyl]amino)[1,1'-biphenyl]-4-yl]-N',N'-bis[4-(1,1-dimethylethyl)phenyl- (9CI) (CA INDEX NAME)



RN 167218-85-1 CAPLUS

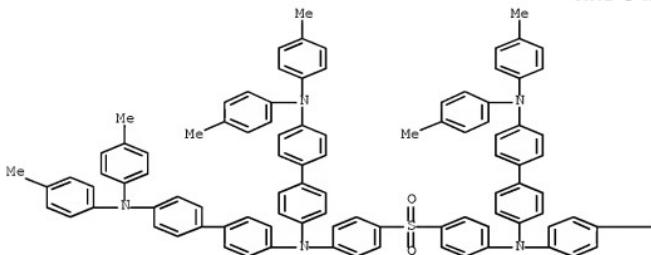
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(sulfonyldi-4,1-phenylene)bis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)



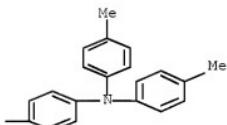
RN 167218-86-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(sulfonyldi-4,1-phenylene)bis[N-[4'-(bis(4-methylphenyl)amino)-[1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)-(9CI) (CA INDEX NAME)

PAGE 1-A

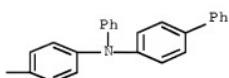
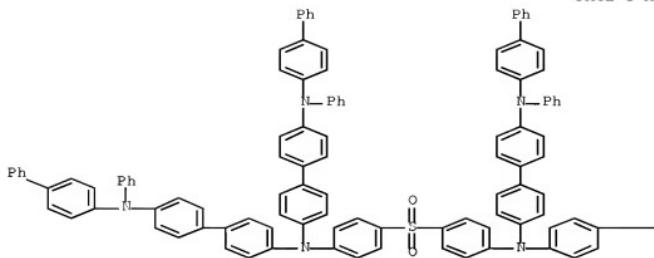


PAGE 1-B



RN 167218-87-3 CAPLUS

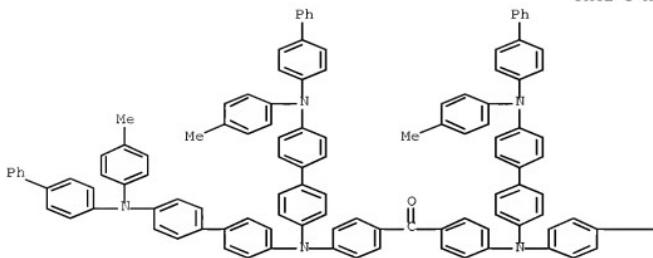
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(sulfonyldi-4,1-phenylene)bis[N-[1,1'-biphenyl]-4-yl-N-[4'-([1,1'-biphenyl]-4-ylphenylamino)-[1,1'-biphenyl]-4-yl]-N'-phenyl- (9CI) (CA INDEX NAME)



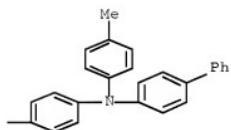
RN 167218-88-4 CAPLUS

CN Methanone, bis[4-[bis[4'-(1,1'-biphenyl)-4-yl(4-methylphenyl)amino]1,1'-biphenyl]-4-yl]aminolphenyl]- (CA INDEX NAME)

PAGE 1-A



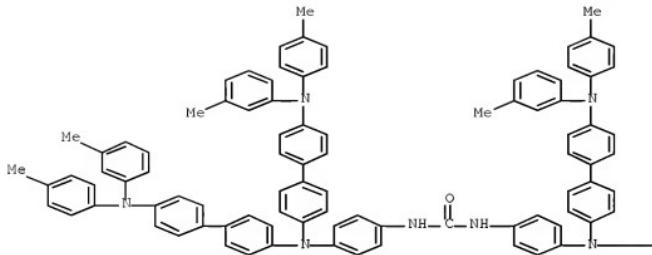
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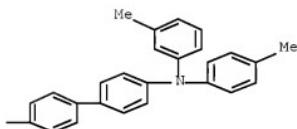
RN 167218-90-8 CAPLUS

CN Urea, N,N'-bis[4-[bis[4'-(3-methylphenyl)(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]aminophenyl]- (CA INDEX NAME)

PAGE 1-A



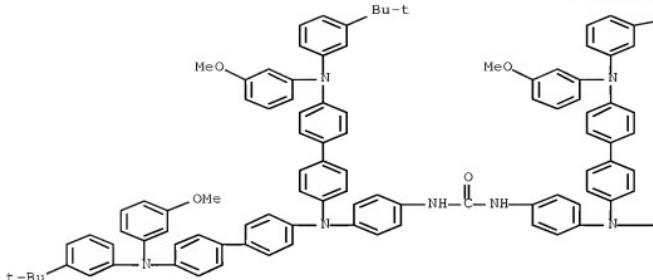
PAGE 1-B



RN 167218-91-9 CAPLUS

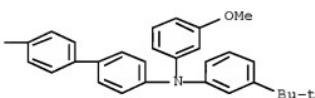
CN Urea, N,N'-bis[4-[bis[4'-(3-(1,1-dimethylethyl)phenyl] (3-methoxyphenyl)amino][1,1'-biphenyl]-4-yl]amino]phenyl]- (CA INDEX NAME)

PAGE 1-A



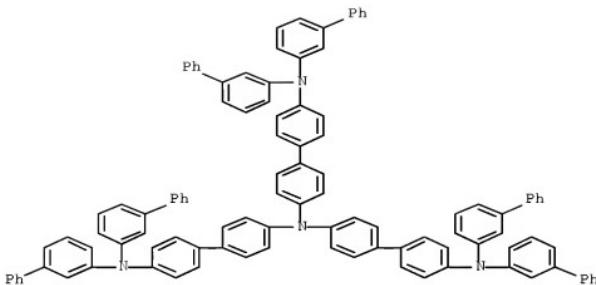
PAGE 1-B

 Bu-t



RN 167218-98-6 CAPLUS

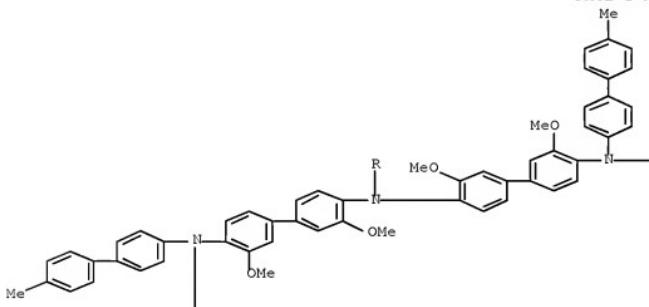
CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis([1,1'-biphenyl]-3-yl)-N',N'-bis[4'-(bis([1,1'-biphenyl]-3-yl)amino)[1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)



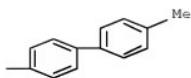
RN 167218-99-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(bis(4'-methyl[1,1'-biphenyl]-4-yl)amino)-3,3'-dimethoxy[1,1'-biphenyl]-4-yl]-3,3'-dimethoxy-N4',N4'-bis(4'-methyl[1,1'-biphenyl]-4-yl)- (CA INDEX NAME)

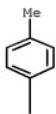
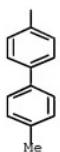
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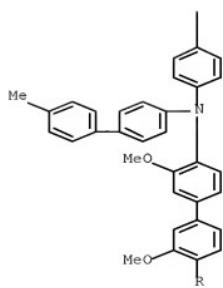
PAGE 1-B



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PAGE 3-A

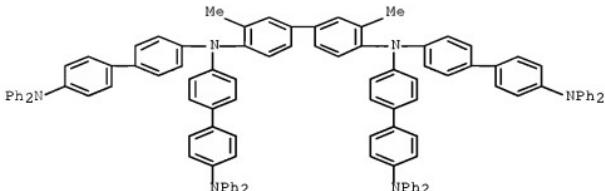


IT 167218-41-9P 167218-51-1P 167218-52-2P
167218-53-3P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(amine compound as electron-transporting material for electroluminescent devices)

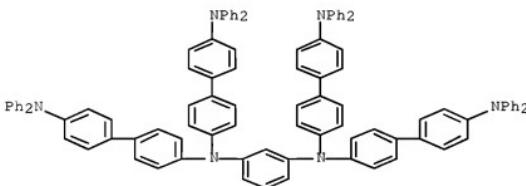
RN 167218-41-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)][1,1'-biphenyl]-4-yl]-3,3'-dimethyl- (CA INDEX NAME)



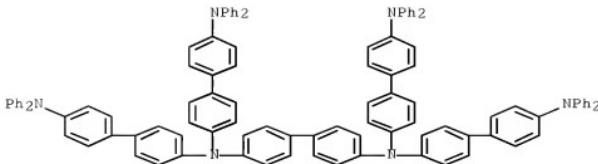
RN 167218-51-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-1,3-phenylenebis[N-[4'-(diphenylamino)][1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)



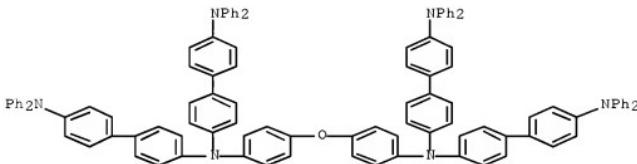
RN 167218-52-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)][1,1'-biphenyl]-4-yl- (CA INDEX NAME)



RN 167218-53-3 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(oxydi-4,1-phenylene)bis[N-(4'-diphenylamino)[1,1'-biphenyl]-4-yl]N,N'-diphenyl- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (18 CITINGS)

L9 ANSWER 84 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1995:489867 CAPLUS Full-text

DOCUMENT NUMBER: 1221277531

ORIGINAL REFERENCE NO.: 122:50397a,50400a

TITLE: Trisarylaminobenzene derivatives, compounds for organic electroluminescent element, and organic electroluminescent element.

INVENTOR(S): Shirota, Yasuhiko; Nakaya, Kenji; Okada, Norihiro; Namba, Kenryo

PATENT ASSIGNEE(S): Japan

SOURCE: Eur. Pat. Appl., 22 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 611148	A1	19940817	EP 1994-300954	19940209
EP 611148	B1	19980603		
R: DE, FR, GB				
JP 07097355	A	19950411	JP 1994-36605	19940209
JP 3419534	B2	20030623		

US 5508136
PRIORITY APPLN. INFO.:

A 19960416

US 1994-194145

19940210

JP 1993-45785

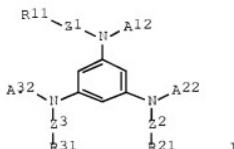
A 19930210

JP 1993-140041

A 19930519

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
OTHER SOURCE(S): MARPAT 122:277531

GI



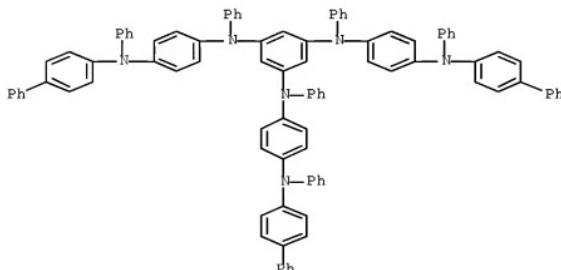
AB Novel trisarylaminobenzene derivs. are represented by the formula I [Z1, Z2, and Z3 = divalent aromatic ring residues, R11, R21, and R31 = groups represented by -NZ1Z2, -NHZ1, -NR1Z1, -Z1, -OZ1 or -SZ1 wherein each of Z1 and Z2 = a monovalent aromatic ring residue, and R1 is an alkyl group, ≥ 1 of R11, R21, and R31 being a group represented by -NZ1Z2, -NHZ1 or -NR1Z1, and A12, A22, and A32 = aromatic residues, alkyl groups or H]. An organic electroluminescent element which uses the compound in an organic compound layer, especially in a hole injection transport layer provides uniform plane light emission and is durable enough to maintain luminance.

IT 162879-23-4

RL: MOA (Modifier or additive use); USES (Uses)
(electroluminescent element component)

RN 162879-23-4 CAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-((1,1'-biphenyl)-4-ylphenylamino)phenyl]-N1,N3,N5-triphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 10 THERE ARE 10 CAPLUS RECORDS THAT CITE THIS RECORD (14 CITINGS)

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The following are valid formats:

ABS ----- GI and AB
ALL ----- BIB, AB, IND, RE
APPS ----- AI, PRAI
BIB ----- AN, plus Bibliographic Data and PI table (default)
CAN ----- List of CA abstract numbers without answer numbers
CBIB ----- AN, plus Compressed Bibliographic Data
CLASS ----- IPC, NCL, ECLA, FTERM
DALL ----- ALL, delimited (end of each field identified)
DMAX ----- MAX, delimited for post-processing
FAM ----- AN, PI and PRAI in table, plus Patent Family data
FBIB ----- AN, BIB, plus Patent FAM
IND ----- Indexing data
IPC ----- International Patent Classifications
MAX ----- ALL, plus Patent FAM, RE
PATS ----- PI, SO
SAM ----- CC, SX, TI, ST, IT
SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;
SCAN must be entered on the same line as the DISPLAY,
e.g., D SCAN or DISPLAY SCAN)
STD ----- BIB, CLASS

IABS ----- ABS, indented with text labels
IALL ----- ALL, indented with text labels
IBIB ----- BIB, indented with text labels
IMAX ----- MAX, indented with text labels
ISTD ----- STD, indented with text labels

OBIB ----- AN, plus Bibliographic Data (original)
OIBIB ----- OBIB, indented with text labels

SBIB ----- BIB, no citations
SIBIB ----- IBIB, no citations

HIT ----- Fields containing hit terms
HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)
containing hit terms
HITRN ----- HIT RN and its text modification
HITSTR ----- HIT RN, its text modification, its CA index name, and
its structure diagram
HITSEQ ----- HIT RN, its text modification, its CA index name, its
structure diagram, plus NTE and SEQ fields
FHITSTR ----- First HIT RN, its text modification, its CA index name, and
its structure diagram
FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
structure diagram, plus NTE and SEQ fields
KWIC ----- Hit term plus 20 words on either side
OCC ----- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field codes. For a list of the display field codes, enter HELP DFIELDS at an arrow prompt (>). Examples of formats include: TI; TI,AU; BIB,ST;

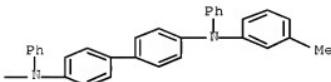
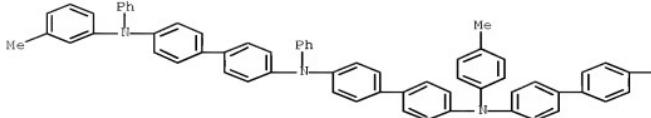
TI,IND; TI,SO. You may specify the format fields in any order and the information will be displayed in the same order as the format specification.

All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR, FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC to view a specified Accession Number.

ENTER DISPLAY FORMAT (BIB):end

=> d ibib abs hitstr 75-79

L9 ANSWER 75 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1997:563428 CAPLUS Full-text
DOCUMENT NUMBER: 127:254633
ORIGINAL REFERENCE NO.: 127:49637a,49640a
TITLE: Temperature dependences of electroluminescent characteristics in the devices fabricated with novel triphenylamine derivatives
AUTHOR(S): Tokito, Shizuo; Tanaka, Hiromitsu; Noda, Koji; Okada, Akane; Taga, Yasunori
CORPORATE SOURCE: Toyota Central Research and Development Laboratories, Inc., Aichi, 480-11, Japan
SOURCE: IEEE Transactions on Electron Devices (1997), 44(8), 1239-1244
CODEN: IETDAI; ISSN: 0018-9383
PUBLISHER: Institute of Electrical and Electronics Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We studied the temperature dependences of the electroluminescent (EL) characteristics of two-layer devices fabricated using four hole-transporting materials based on triphenylamine, and a typical emitting material, tris(8-quinolinolato) aluminum. The thermal stability of the organic EL devices is clearly seen to depend on the glass transition temperature (Tg) of the hole-transporting material. The EL device with a pentamer of triphenylamine exhibits uniform light emission in a continuous operation up to 155° without breakdown. A lowering of the turn-on voltage for light emission and an increase of luminous efficiency with increasing temperature are found in the devices. Excellent durability of continuous operation is also achieved at high temps. Our results indicate that the linear linkage of triphenylamine provides the high Tg material and the high device performance at high temps.
IT 189196-94-9
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(hole-transport layer in electroluminescent device and device thermal stability related to glass transition temperature)
RN 189196-94-9 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-methylphenyl)-N'-[4'-(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]-N-[4'-(4-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylamino][1,1'-biphenyl]-4-yl]-N'-phenyl- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 44 THERE ARE 44 CAPLUS RECORDS THAT CITE THIS RECORD (44 CITINGS)
 REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 76 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1997:269788 CAPLUS [Full-text](#)
 DOCUMENT NUMBER: 126:349527
 ORIGINAL REFERENCE NO.: 126:67847a,67850a
 TITLE: Thermal stability in oligomeric triphenylamine/tris(8-quinolinolato) aluminum electroluminescent devices
 AUTHOR(S): Tokito, Shizuo; Tanaka, Hiromitsu; Noda, Koji; Okada, Akane; Taga, Yasunori
 CORPORATE SOURCE: Toyota Central Research and Development Laboratories, Inc., Nagakute, 480-11, Japan
 SOURCE: Applied Physics Letters (1997), 70(15), 1929-1931
 CODEN: APPLAB; ISSN: 0003-6951
 PUBLISHER: American Institute of Physics
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Thermal stability of the electroluminescent (EL) devices using various hole-transporting materials based on triphenylamine, and a typical emitting material, tris(8-quinolinolato) Al was systematically studied. The thermal stability of the EL devices is clearly seen to depend on the glass transition temperature (Tg) of the hole-transporting material. The highest thermal stability up to 155° was obtained in the device using the pentamer of triphenylamine. The linear linkage of triphenylamine is useful to attain high Tg rather than the branch linkage.

IT 189196-94-9

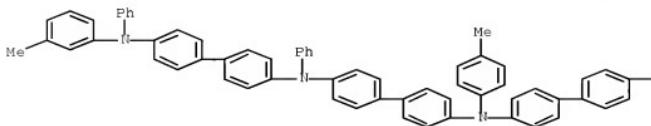
RL: DEV (Device component use); USES (Uses)
 (thermal stability in oligomeric triphenylamine/tris(8-quinolinolato) aluminum electroluminescent devices)

RN 189196-94-9 CAPLUS

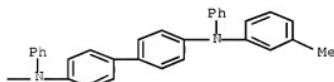
CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-methylphenyl)-N'-[4'-(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]-N-[4'-(4'-(3-

methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylamino][1,1'-biphenyl]-4-yl]-N'-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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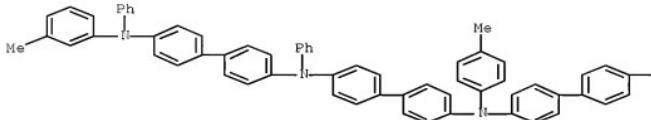


OS.CITING REF COUNT: 171 THERE ARE 171 CAPLUS RECORDS THAT CITE THIS RECORD (172 CITINGS)
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

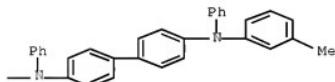
L9 ANSWER 77 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1997:224293 CAPLUS [Full-text](#)
DOCUMENT NUMBER: 126:299493
ORIGINAL REFERENCE NO.: 126:57857a,57860a
TITLE: Thermal stability of electroluminescent devices fabricated using novel charge-transporting materials
AUTHOR(S): Tokito, Shizuo; Tanaka, Hiromitsu; Noda, Koji; Okada, Akane; Taga, Yasunori
CORPORATE SOURCE: Toyota Central Research and Development Laboratories Inc., Aichi, 480-11, Japan
SOURCE: Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1997), 38(1), 388-389
CODEN: ACPAY; ISSN: 0032-3934
PUBLISHER: American Chemical Society, Division of Polymer Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Novel electron- and hole-transporting materials for the electroluminescent devices are described. The basic structures of the hole-transporting materials are a linear or branch linkages of triphenylamine moiety. The electron-transporting materials are based on oxadiazole moiety with branched or twisted structures. The electroluminescent characteristics of these materials and devices based on them are also presented.
IT 189196-94-9
RL: DEV (Device component use); PRP (Properties); USES (Uses) (thermal stability of electroluminescent devices fabricated

using novel charge-transporting materials)
RN 189196-94-9 CAPLUS
CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-methylphenyl)-N'-(4-[(3-methylphenyl)phenylamino]biphenyl-4-yl)-N-[4-[(4-[(3-methylphenyl)phenylamino]biphenyl-4-yl)phenylamino]biphenyl-4-yl]-N'-phenyl- (9CI) (CA INDEX NAME)

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PAGE 1-B

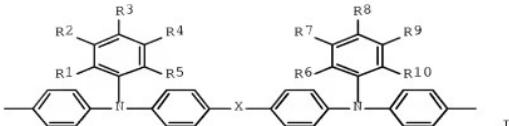


OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD
(6 CITINGS)

L9 ANSWER 78 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1997:154641 CAPLUS Full-text
DOCUMENT NUMBER: 126:164231
ORIGINAL REFERENCE NO.: 126:31619a,31622a
TITLE: Hole-transporting material and organic
electroluminescent device and
electrophotographic photoreceptor using it
INVENTOR(S): Tamano, Michiko; Onikubo, Shunichi; Enokida, Toshio
PATENT ASSIGNEE(S): Toyo Ink Mfg Co, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08314169	A	19961129	JP 1995-121026	19950519
JP 3640090	B2	20050420	JP 1995-121026	19950519

PRIORITY APPLN. INFO.: GI



AB The title material has the general formula HA(BA)_nBAH [A = diamine derivative residue I; R1-10 = H, halo, (substituted) alkyl, (substituted) alkoxy, (substituted) thioalkoxy, CN, (mono- or di-substituted) amino, OH, SH, (substituted) aryloxy, (substituted) arylothio, (substituted) aromatic ring, (substituted) heterocyclic ring (these adjacent substituents may form aliphatic, aromatic or heterocyclic rings which may be substituted); X = O, S, Se; B = linking group CYZ; Y, Z = H, halo, (substituted) alkyl, (substituted) aromatic ring, (substituted) heterocyclic ring, Y and Z may form an aliphatic, aromatic or heterocyclic ring which may be substituted; n = 1-5000]. The electroluminescent device, comprising ≥ 1 organic compound thin film-made luminescent layers sandwiched between a pair of electrodes, contains the material in ≥ 1 of the layers. The photoreceptor contains a charge-generating material and the pos. hole-transporting material on a conductive support. The electroluminescent device shows high luminescent efficiency, brightness, and durability and the photoreceptor gives clear images in repeated use.

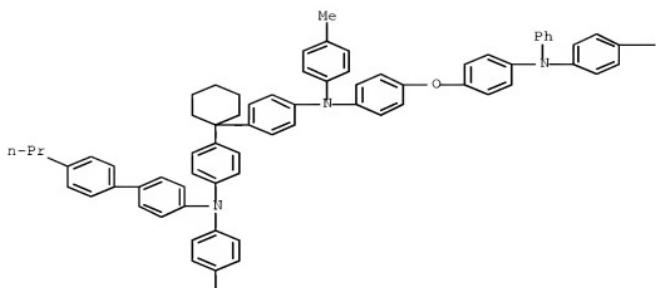
IT 186672-07-1

RL: DEV (Device component use); USES (Uses)
(electrophotog. photoreceptor and electroluminescent device
containing aromatic polyamine hole-transporting material)

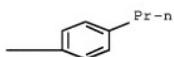
RN 186672-07-1 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-[4-[4-[(4-methylphenyl)[4-[1-[4-[4-[(4-methylphenyl)[4-[1-[4-[4-[(4-methylphenyl)phenyl]amino]phenoxy]phenyl](4'-propyl[1,1'-biphenyl]-4-yl)amino]phenyl]cyclohexyl]phenyl]amino]phenoxy]phenyl](4'-propyl[1,1'-biphenyl]-4-yl)amino]phenyl]cyclohexyl]phenyl]amino]phenoxy]phenyl]-N-[4-[1-[4-[(4-methylphenyl)[4-[4-[phenyl(4'-propyl[1,1'-biphenyl]-4-yl)amino]phenoxy]phenyl]amino]phenyl]cyclohexyl]phenyl]-4'-propyl- (9CI)
(CA INDEX NAME)

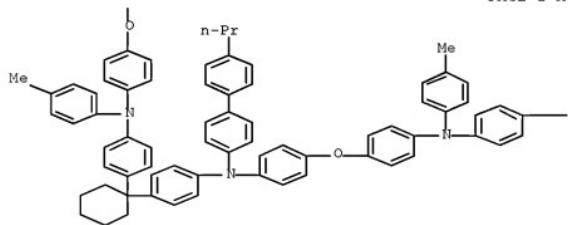
PAGE 1-A

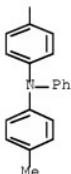
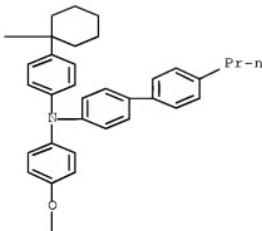


PAGE 1-B



PAGE 2-A





L9 ANSWER 79 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 1997:113482 CAPLUS Full-text
 DOCUMENT NUMBER: 126:118346
 ORIGINAL REFERENCE NO.: 126:22853a,22856a
 TITLE: Cyclic phosphazene compounds for organic
 electroluminescent membranes
 INVENTOR(S): Shigehara, Junko; Nakanaga, Takefumi; Tada, Juji;
 Inoe, Tetsuji; Nakatani, Kenji
 PATENT ASSIGNEE(S): Otsuka Kagaku KK, Japan; TDK Electronics Co., Ltd.
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08283416	A	19961029	JP 1995-113755	19950414
JP 3560259	B2	20040902		

PRIORITY APPLN. INFO.:

JP 1995-113755

19950414

OTHER SOURCE(S):

MARPAT 126:118346

AB The title compds. are prepared by reacting hexachlorocyclotriphosphazene or octachlorocyclotetraphosphazene with N,N'-diphenyl-N-(3-methylphenyl)-N'-(3-hydroxyphenyl)-1,1'-biphenyl-4,4'-diamine (prepared from N,N'-Diphenylbenzidine) then optionally with phenol.

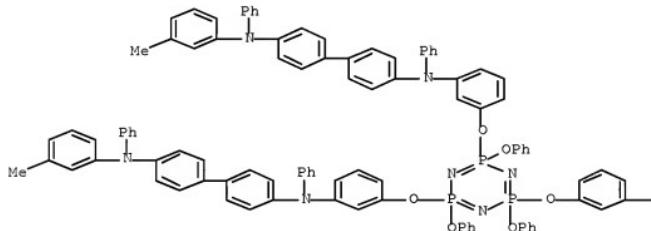
IT 186139-88-8P 186139-89-9P 186139-91-3P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(cyclic phosphazene compds. for organic electroluminescent membranes)

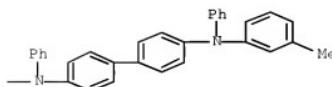
RN 186139-88-8 CAPLUS

CN 1,3,5,2,4,6-Triazatrichosphorine, 2,2,4,4,6,6-hexahydro-2,4,6-tris[3-[4'-(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylamino]phenoxy]-2,4,6-triphenoxy- (9CI) (CA INDEX NAME)

PAGE 1-A



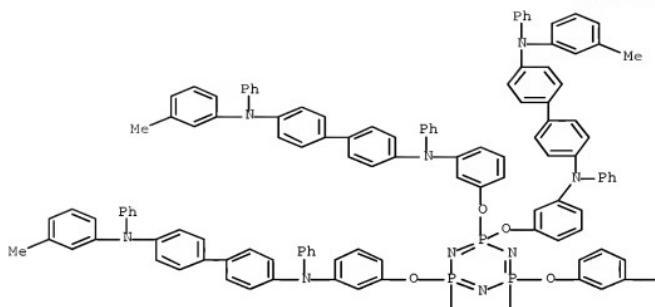
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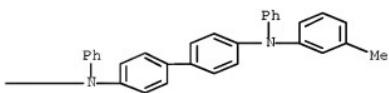
RN 186139-89-9 CAPLUS

CN 1,3,5,2,4,6-Triazatrichosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[3-[4'-(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylamino]phenoxy- (9CI) (CA INDEX NAME)

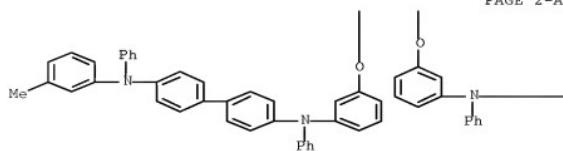
PAGE 1-A



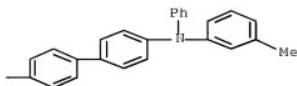
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PAGE 2-A



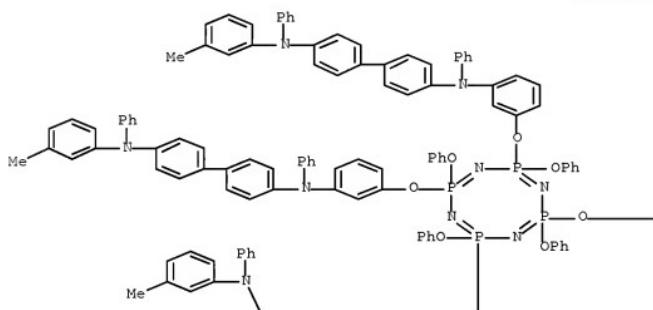
PAGE 2-B



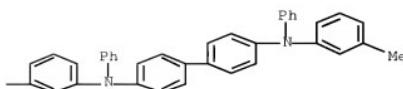
RN 186139-91-3 CAPLUS

CN 1,3,5,7,2,4,6,8-Tetrazatetraphosphocine,
2,2,4,4,6,6,8,8-octahydro-2,4,6,8-tetrakis[3-[4'-(3-
methylphenyl)phenylamino] [1,1'-biphenyl]-4-yl]phenylamino]phenoxy]-2,4,6,8-
tetraphenoxy- (9CI) (CA INDEX NAME)

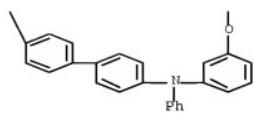
PAGE 1-A



PAGE 1-B



PAGE 2-A



=> FILE REG
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USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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=> D HIS

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L2 18 S 15<RID.CNT (T) 46.150.18/RID
L3 10 S L2 AND 7<N

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L5 28615 S YOKOYAMA ?/AU
L6 24332 S TANIGUCHI ?/AU
L7 18873 S ICHIKAWA ?/AU
L8 7 S L4 AND L5 AND L6 AND L7
 SEL L8 2,4,6 RN

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L10 10033 S L2
L11 79 S L10 AND 7/N
L12 57937 S 9<RID.CNT (T) 46.150.18/RID
L13 21904 S L12 AND 2<N
L14 913700 S C H N/ELF AND 3/ELC.SUB
L15 2074 S L13 AND L14
L16 1895 S L10 AND 7<N
L17 775 S L16 NOT M/ELS
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L19 662 S L17 NOT L18
L20 2 S L18 AND L9

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L23 511 S L19
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L25 34 S L22 AND L24
L26 78 S L22 NOT (L21 OR L25)
L27 46 S L23 AND L24
L28 41 S L27 NOT (L21 OR L25 OR L26)
L29 29 S L25 NOT L21
L30 78 S L26 NOT (L21 OR L29)
L31 41 S L28 NOT (L21 OR L29 OR L30)
L32 3 S 1808-2005/PY,PRY,AY AND L21
L33 22 S 1808-2005/PY,PRY,AY AND L29
L34 54 S 1808-2005/PY,PRY,AY AND L30

L35 28 S 1808-2005/PY,PRY,AY AND L31
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L37 1 S E3
 E C138H120N10/MF

L38 1 S E3
 E C174H198N10/MF

L39 1 S E3
 E C154H126N8/MF

L40 2 S E3
 E C162H134N8/MF

L41 1 S E3
 E C176H132N18/MF

L42 1 S E3
 E C120H99N9/MF

L43 1 S E3
 E C198H144N10/MF

L44 1 S E3
 E C126H96N10/MF

L45 2 S E3
 E C180H120N12/MF

L46 1 S E3
 E C156H108N12/MF

L47 3 S E3

L48 12 S L36 AND (L37-L47)

L49 FILE 'HCA' ENTERED AT 12:13:49 ON 04 AUG 2010
 17 S L48

L50 13 S 1808-2005/PY,PRY,AY AND L49
 SEL L35 1-28 HIT RN

L51 FILE 'REGISTRY' ENTERED AT 12:17:43 ON 04 AUG 2010
 46 S E1-E46
 E C170H152N8O4/MF

L52 1 S E3
 E C111H82F6N8/MF

L53 1 S E3
 E C170H124F28N8O4/MF

L54 1 S E3
 E C111H80CL2F6N8/MF

L55 1 S E3
 E C202H184N8O4/MF

L56 1 S E3
 E C99H74F6N8/MF

L57 1 S E3
 E C190H160N8O8/MF

L58 1 S E3

L59 7 S L51 AND (L52-L58)

FILE 'HCA' ENTERED AT 12:26:05 ON 04 AUG 2010
L60 2 S L59
L61 2 S 1808-2005/PY,PRY,AY AND L60
L62 2 S L61 AND L24

=> FILE HCA
FILE 'HCA' ENTERED AT 12:15:26 ON 04 AUG 2010
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INVENTORS' COMPOUNDS:

=> D L32 1-3 BIB ABS HITSTR HITRN

L32 ANSWER 1 OF 3 HCA COPYRIGHT 2010 ACS on STN
AN 153:130196 HCA Full-text
TI Aryl amine compound for organic electroluminescent device
IN Miki, Tetsuzo; Taniguchi, Yoshio
PA Hodogaya Chemical Co., Ltd., Japan
SO Jpn. Tokkyo Koho, 12pp.
CODEN: JTXXFF

DT Patent
LA Japanese
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 4491264	B2	20100630	JP 2004-90334	20040325
	JP 2007084439	A	20070405		
	WO 2005094133	A1	20051006	WO 2005-JP6426	20050325
	EP 1748681	A1	20070131	EP 2005-727462	20050325
	CN 1934911	A	20070321	CN 2005-80009543	20050325
	CN 100505966	C	20090624		
	KR 2007010009	A	20070119	KR 2006-719734	20060925
	US 20070285004	A1	20071213	US 2007-594239	20070614
PRAI	JP 2004-89836	A	20040325		
	JP 2004-90334	A	20040325		
	WO 2005-JP6426	W	20050325		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

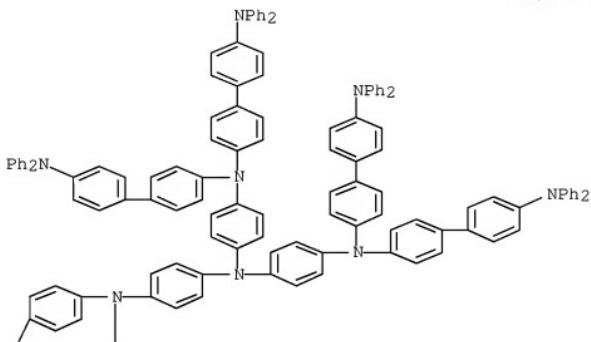
AB The invention refers to an aryl amine compd. N((Ph)-N((Ph-Ph)N(Ph)Ph-N(Ph)(Ph-Ph)-N(Ph)2.)2)3 or N(Ph-N((Ph-Ph)N(Ph)(Ph-3-Me))2)2 used as org. material in an org. electroluminescent device.

IT 866024-27-3P
(aryl amine compd. for org. electroluminescent device)

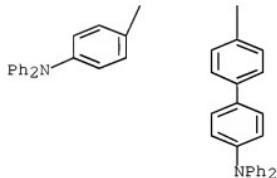
RN 866024-27-3 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'',N4''''-(nitrilotri-4,1-phenylene)tris[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IT 866024-27-3P

(aryl amine compd. for org. electroluminescent device)

OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)

L32 ANSWER 2 OF 3 HCA COPYRIGHT 2010 ACS on STN

AN 146:316606 HCA Full-text

TI Preparation of arylamine compounds as organic electroluminescent materials

IN Miki, Tetsuzo; Yokoyama, Norimasa; Taniguchi, Yoshio; Ichikawa, Musubu
PA Hodogaya Chemical Co., Ltd., Japan; Shinshu University
SO PCT Int. Appl., 27pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2007026846	A1	20070308	WO 2006-JP317272	20060831
	EP 1942098	A1	20080709	EP 2006-797232	20060831
	KR 2008038383	A	20080506	KR 2008-705180	20080229
	CN 101253145	A	20080827	CN 2006-80032045	20080229
	US 20090278442	A1	20091112	US 2008-65417	20080229
PRAI	JP 2005-251968	A	20050831		
	WO 2006-JP317272	W	20060831		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 146:316606

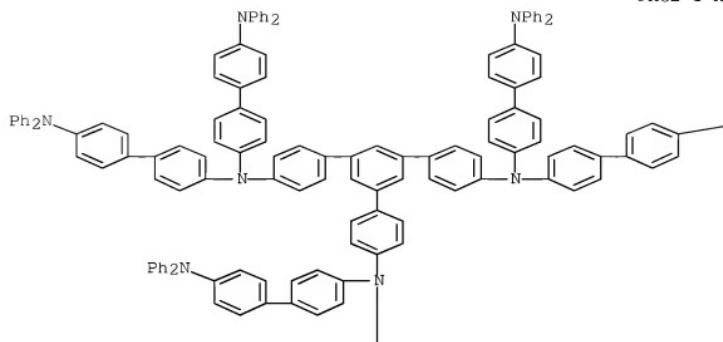
AB Title compds. I of 1500 to 6000 mol. wt. [X = single bond, CH, CH₂, etc.; Ar₁, Ar₂ = (un)substituted phenylene, biphenylene or ter-phenylene; R₁-R₄ = aryl (wherein aryl may be substituted with a diarylamino so as to form a triphenylamine partial structure and terminal aryl may repeat itself and may be substituted with a diarylamino so as to form a triphenylamine-like partial structure.); m = 0-2; n = 0, 1] were prep'd. Thus, Pd(OAc)₂ catalyzed reaction of N,N-bis(4'-diphenylaminophenyl-4-yl)amine with 1,3,5-tris(4-bromophenyl)benzene afforded compd. II, which showed green electroluminescence with luminous efficiency of 4.31 (5000 cd/m²) and 4.37 (10000 cd/m²).

IT 928326-84-5P
(prepn. of arylamine compds. as org. electroluminescent materials)

RN 928326-84-5 HCA

CN [1,1':3',1''-Terphenyl]-4,4''-diamine,
5'-[4-[bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]amino]phenyl]-
N4,N4,N4'',N4'''-tetrakis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]- (CA
INDEX NAME)

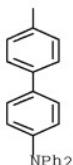
PAGE 1-A



PAGE 1-B

—NPh₂

PAGE 2-A



IT 928326-84-5P
(prep. of arylamine compds. as org. electroluminescent materials)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 3 OF 3 HCA COPYRIGHT 2010 ACS on STN
AN 143:356354 HCA Full-text
TI Arylamine compound and organic electroluminescent device
IN Miki, Tetsuzo; Tarumoto, Naohiro; Taniguchi, Yoshio; Ichikawa, Musubu
PA Hodogaya Chemical Co., Ltd., Japan; Shinshu University
SO PCT Int. Appl., 42 pp.
CODEN: PIXXD2

DT Patent
LA Japanese

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005094133	A1	20051006	WO 2005-JP6426	20050325
	JP 4491264	B2	20100630	JP 2004-90334	20040325
	JP 2007084439	A	20070405		
	EP 1748681	A1	20070131	EP 2005-727462	20050325
	CN 1934911	A	20070321	CN 2005-80009543	20050325
	CN 100505966	C	20090624		
	KR 2007010009	A	20070119	KR 2006-719734	20060925
	US 20070285004	A1	20071213	US 2007-594239	20070614
PRAI	JP 2004-89836	A	20040325		
	JP 2004-90334	A	20040325		
	WO 2005-JP6426	W	20050325		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 143:356354

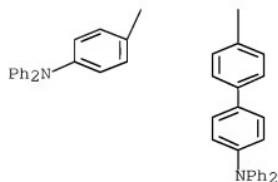
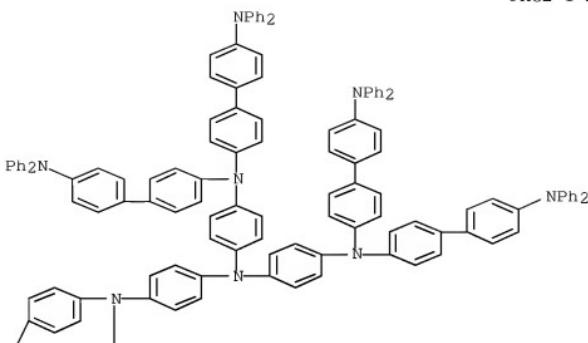
AB Disclosed is an arylamine compd. represented by the general formula (R5R6N-Ar3)n-X-[(Ar1-NR1R2)]-Ar2-NR3R4 which has a mol. wt. of not less than 1,500 and not more than 6,000. Also disclosed is an org. electroluminescent device contg. such a compd. The arylamine compd. has excellent hole injection/transporting characteristics, and enables to form a stable thin film. By using such a compd., an org. EL device can be greatly improved in the luminous efficiency and durability when compared with conventional org. EL devices.

IT 866024-27-3P

(arylamine compd. and org. electroluminescent device)

RN 866024-27-3 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'',N4''''-(nitrilotri-4,1-phenylene)tris[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)



IT 866024-27-3P
(arylamine compd. and org. electroluminescent device)
OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> D 150 1-13 BIR ABS HITSTR HITRN

L50 ANSWER 1 OF 13 HCA COPYRIGHT 2010 ACS on STN
2N 146-326348 HCA Full text

AN 1461326348 HCA FULL-TEXT
TI Electrophotographic photoconductors containing polyamine
hole-transport agents, and electrophotographic apparatus and their

process cartridge
IN Tanaka, Takakazu; Ogaki, Harunobu; Kaku, Kenichi
PA Canon Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 27pp.
CODEN: JKXXAF

DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2007065164	A	20070315	JP 2005-249389	20050830
PRAI	JP 2005-249389			20050830	
OS	MARPAT 146:326348				
GI					



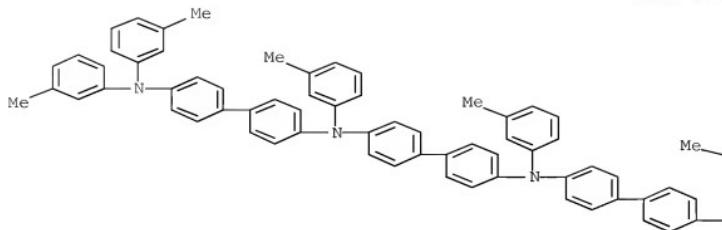
I

AB The photoconductors comprise elec. conductive supports and photosensitive layers consisting of intermediate layers contg. electron-transport agents, charge-generating layers, and charge-transport layers, wherein hole-transport agents I [Ar101-108 = monovalent (substituted) arom. hydrocarbon ring, arom. heterocycle; Z11-15 = divalent (substituted) arom. hydrocarbon ring, arom. heterocycle] with mol. wt. 1500-4000 are included in the charge-transport layers. Alternatively, the photoconductors contain different polyamine hole-transport agents (structure given). Electrophotog. app. employing the photoconductors but free from static eliminating means provide ghost-free high quality images.

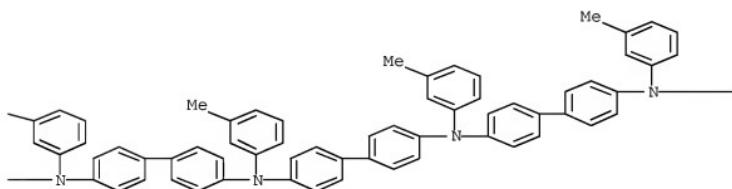
IT 928769-93-1
(hole-transport agents; electrophotog. photoconductors contg.
polyamine hole-transport agents)

RN 928769-93-1 HCA
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-[[4'-[[bis(3-methylphenyl)amino][1,1'-biphenyl]-4-yl](3-methylphenyl)amino][1,1'-biphenyl]-4-yl](3-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4,N4'-bis(3-methylphenyl)- (CA INDEX NAME)

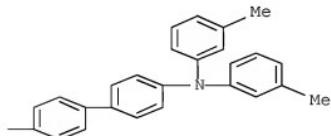
PAGE 1-A



PAGE 1-B



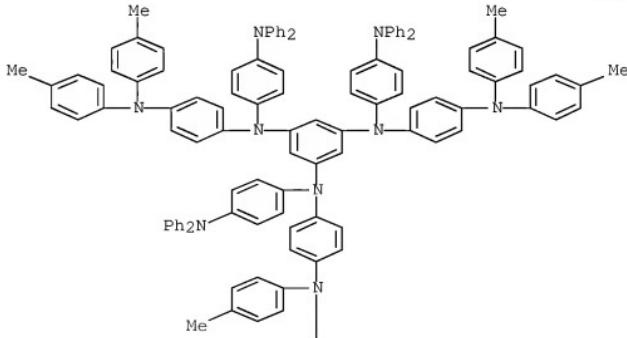
PAGE 1-C



(hole-transport agents; electrophotog. photoconductors contg.
polyamine hole-transport agents)

L50 ANSWER 2 OF 13 HCA COPYRIGHT 2010 ACS on STN
AN 144:202662 HCA Full-text
TI Charge transport in amorphous molecular materials
AU Shirota, Yasuhiko; Okumoto, Kenji; Ohishi, Hitoshi; Tanaka, Masatake;
Nakao, Masato; Wayaku, Kenjiro; Nomura, Satoyuki; Kageyama, Hiroshi
CS Fukui Univ. of Technology, 3-6-1, Gakuen Fukui City, Fukui, 910-8505,
Japan
SO Proceedings of SPIE-The International Society for Optical Engineering
(2005), 5937(Organic Light-Emitting Materials and Devices
IX), 593717/1-593717/10
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
AB Charge carrier drift mobilities of hole-transporting amorphous mol.
materials have been detd. by a time-of-flight method. Elec.-field and temp.
dependencies of carrier mobilities have been analyzed in terms of the
disorder formalism, and charge transport in amorphous mol. materials is
discussed in relation to mol. structures. Hole-transporting amorphous mol.
materials with high mobilities of the order of 10-2cm²V⁻¹s⁻¹ have been
developed.
IT 874946-05-1
(charge-carrier drift mobilities of hole-transporting amorphous
mol. materials by time-of-flight method)
RN 874946-05-1 HCA
CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-[bis(4-
methylphenyl)amino]phenyl]-N1,N3,N5-tris[4-(diphenylamino)phenyl]-
(CA INDEX NAME)

PAGE 1-A





IT 874946-05-1
 (charge-carrier drift mobilities of hole-transporting amorphous
 mol. materials by time-of-flight method)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
 RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 3 OF 13 HCA COPYRIGHT 2010 ACS on STN
 AN 143:268278 HCA Full-text

TI Fluorescent solvatochromism of bi-polar
 N,N-diphenylaminoaryl-substituted hexaazatriphenylenes,
 tetraazaphenanthrene, and quinoxalines

AU Hirayama, Tomoyuki; Yamasaki, Sumio; Ameku, Hiroki; Ishi-i, Tsutomu;
 Thiemann, Thies; Mataka, Shuntaro

CS Department of Industrial Chemistry, Faculty of Engineering, Kyushu
 Sangyo University, Higashi-ku, Fukuoka, 813-8503, Japan

SO Dyes and Pigments (2005), 67(2), 105-110
 CODEN: DYPIDX; ISSN: 0143-7208

PB Elsevier Ltd.

DT Journal

LA English

OS CASREACT 143:268278

AB 1,4,5,8,9,12-Hexaazatriphenylenes, 1,4,5,8-tetraazaphenanthrene, and
 quinoxalines, each with six, four, and two N,N-diphenylaminobiphenyl and
 N,N-diphenylaminophenyl groups, resp., were prep'd. and their absorption and
 fluorescent spectral behaviors were investigated. These compds. showed
 strong fluorescent solvatochromism arising from the donor-acceptor nature of
 the π -electron-deficient arom. core and π -electron-rich diphenylamino
 terminal groups.

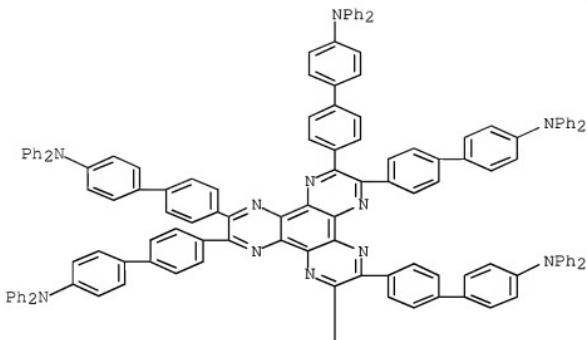
IT 847755-75-3
 (dye; fluorescent solvatochromism of bipolar
 diphenylaminoaryl-substituted hexaazatriphenylenes)

RN 847755-75-3 HCA

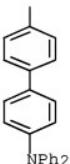
CN [1,1'-Biphenyl]-4-amine,
 4',4'',4''',4''''',4'''''',4''''''',4'''''''-dipyrazino[2,3-f:2',3'-
 h]quinoxaline-2,3,6,7,10,11-hexaylhexakis[N,N-diphenyl- (9CI) (CA

INDEX NAME)

PAGE 1-A



PAGE 2-A



IT 847755-75-3

(dye; fluorescent solvatochromism of bipolar
diphenylaminoaryl-substituted hexaazatriphenylenes)

OSC.G 10 THERE ARE 10 CAPLUS RECORDS THAT CITE THIS RECORD (10
CITINGS)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 4 OF 13 HCA COPYRIGHT 2010 ACS on STN

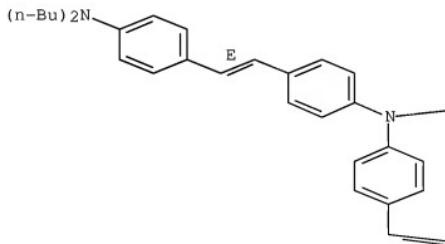
AN 143:213057 HCA Full-text

TI Synthesis of Triphenylamine-Cored Dendritic Two-Photon Absorbing

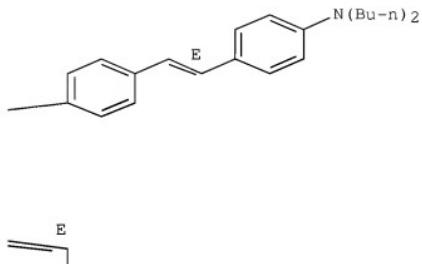
AU Chromophores
 Wei, Peng; Bi, Xiangdong; Wu, Zhe; Xu, Zhi
 CS Department of Chemistry, University of Missouri-Kansas City, Kansas
 City, MO, 64110, USA
 SO Organic Letters (2005), 7(15), 3199-3202
 CODEN: ORLEF7; ISSN: 1523-7060
 PB American Chemical Society
 DT Journal
 LA English
 OS CASREACT 143:213057
 AB A series of dendritic two-photon absorbing chromophores contg.
 triphenylamine moiety as a core and(or) branching points and
 phenylenevinylene links have been synthesized through a convergent synthetic
 strategy. One-photon and two-photon optical properties of these mols. were
 characterized. In the nanosecond time domain, these mols. exhibited large
 two-photon absorption (TPA) cross sections up to $7.56-12.2 + 10^{-44} \text{ s cm}^4$ at
 800 nm, indicating that these mol. structures were viable candidates for
 various two-photon related applications.
 IT 862420-07-3P
 (synthesis and optical properties of triphenylamine-cored dendritic
 two-photon absorbing chromophores having phenylenevinylene links)
 RN 862420-07-3 HCA
 CN Benzenamine, 4-[(1E)-2-[4-[bis[4-[(1E)-2-[4-
 [(1E)-2-[4-[bis[4-[(1E)-2-[4-
 (dibutylamino)phenyl]ethenyl]phenyl]amino]phenyl]ethenyl]-N,N-bis[4-
 (dibutylamino)phenyl]ethenyl]phenyl]amino]phenyl]ethenyl]phenyl]- (CA
 INDEX NAME)

Double bond geometry as shown.

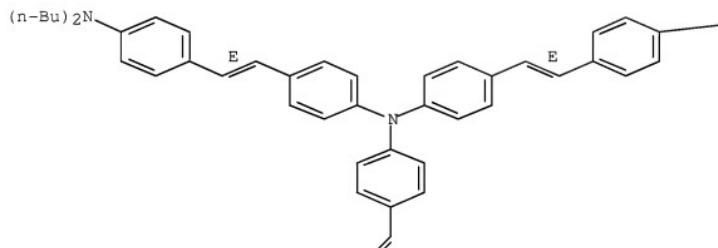
PAGE 1-A



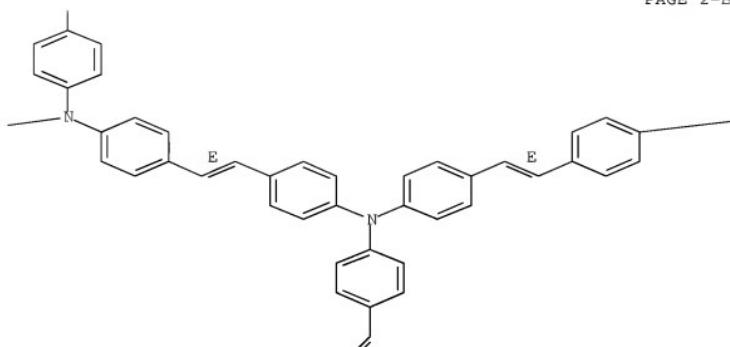
PAGE 1-B



PAGE 2-A



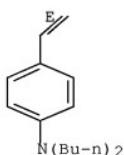
PAGE 2-B

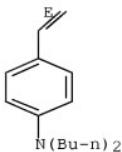


PAGE 2-C

$-\text{N}(\text{Bu-n})_2$

PAGE 3-A





IT 862420-07-3P

(synthesis and optical properties of triphenylamine-cored dendritic two-photon absorbing chromophores having phenylenevinylene links)

OSC.G 47 THERE ARE 47 CAPLUS RECORDS THAT CITE THIS RECORD (47 CITINGS)

RE.CNT 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 5 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 143:183088 HCA Full-text

TI Electrophotographic photoreceptors with good abrasion and scratch resistance, process cartridges, and electrophotographic apparatus

IN Ogaki, Harunobu; Tanaka, Takakazu; Kako, Kenichi

PA Canon Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 50 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2005208111	A	20050804	JP 2004-11685	20040120
PRAI JP 2004-11685			20040120	
OS MARPAT 143:183088				

AB The photoreceptors have (A) charge generation layers contg. charge generation materials and specific arom. polyamine charge transport materials, and (B) charge transport layers contg. 90-100% specific arom. polyamine charge transport materials with mol. wt. 1500-4000 in this order on supports. The electrophotog. app. shows good printing durability.

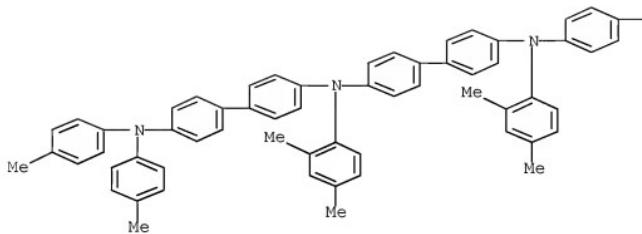
IT 861249-20-9

(electrophotog. photoreceptors contg. specific arom. polyamine charge transport materials in charge generation layers and charge transport layers)

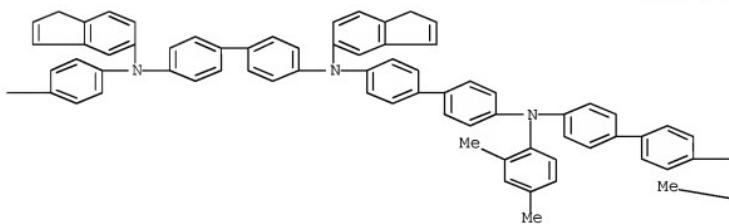
RN 861249-20-9 HCA

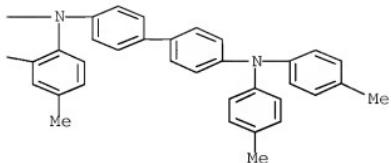
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-[4'-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl](2,4-dimethylphenyl)amino][1,1'-biphenyl]-4-yl](2,4-dimethylphenyl)amino][1,1'-biphenyl]-4-yl]-N4,N4'-di-1H-inden-5-yl-(CA INDEX NAME)

PAGE 1-A



PAGE 1-B





IT 861249-20-9

(electrophotog. photoreceptors contg. specific arom. polyamine
charge transport materials in charge generation layers and charge
transport layers)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L50 ANSWER 6 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 143:86617 HCA Full-text

TI Purification of charge-transporting agent using continuous column chromatography, electrophotographic photoreceptor, process cartridge, and apparatus

IN Tanaka, Takakazu; Ogaki, Harunobu; Kako, Kenichi; Yoshida, Akira

PA Canon Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 32 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005162620	A	20050623	JP 2003-399888	20031128
PRAI	JP 2003-399888			20031128	

AB The charge-transporting agent is purified by continuous column chromatog. The charge-transporting agent may be R1(NR2Z1)nNR3R4 (n = 5-9; R1-4 = monovalent arom. hydrocarbyl or heterocycle; Z1 = divalent arom. hydrocarbylene or heterocycle; R2s and Z1s may be different) with mol. wt. 1500-4000. Electrophotog. photoreceptor using the purified charge-transporting agent, and process cartridge and app. using the photoreceptor are also claimed. The photoreceptor shows good stability and printing durability in repeated printing.

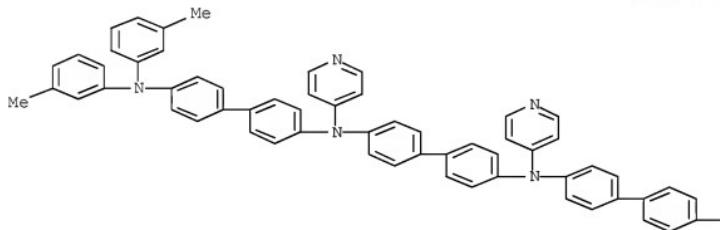
IT 855290-79-8P

(purifn. of polyamine charge-transporting agent using continuous column chromatog. for electrophotog. photoreceptor)

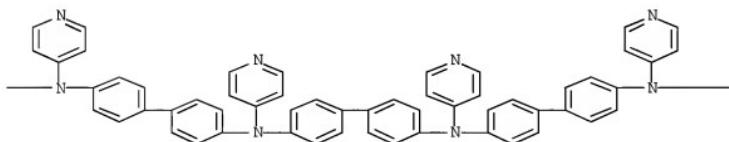
RN 855290-79-8 HCA

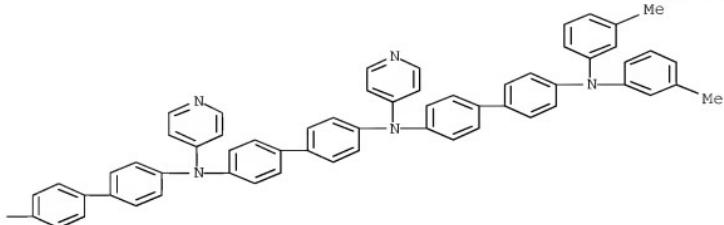
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-[4'-[4'-[4'-[bis(3-methylphenyl)amino][1,1'-biphenyl]-4-yl]-4-pyridinylamino][1,1'-biphenyl]-4-yl]-4-pyridinylamino][1,1'-biphenyl]-4-yl]-4-pyridinylamino][1,1'-biphenyl]-4-yl]-N4,N4'-di-4-pyridinyl- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B





IT 855290-79-8P

(purifn. of polyamine charge-transporting agent using continuous column chromatog. for electrophotog. photoreceptor)

L50 ANSWER 7 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 142:306794 HCA Full-text

TI Combination of an Aromatic Core and Aromatic Side Chains Which Constitutes Discotic Liquid Crystal and Organogel Supramolecular Assemblies

AU Ishii, Tsutomu; Hirayama, Tomoyuki; Murakami, Koichi; Tashiro, Hiroshi; Thiemann, Thies; Kubo, Kanji; Mori, Akira; Yamasaki, Sumio; Akao, Tetsuyuki; Tsuboyama, Akira; Mukaiide, Taihei; Ueno, Kazunori; Mataka, Shuntaro

CS Institute for Materials Chemistry and Engineering (IMCE), Kyushu University, Kasuga, 816-8580, Japan

SO Langmuir (2005), 21(4), 1261-1268
CODEN: LANGD5; ISSN: 0743-7463

PB American Chemical Society

DT Journal

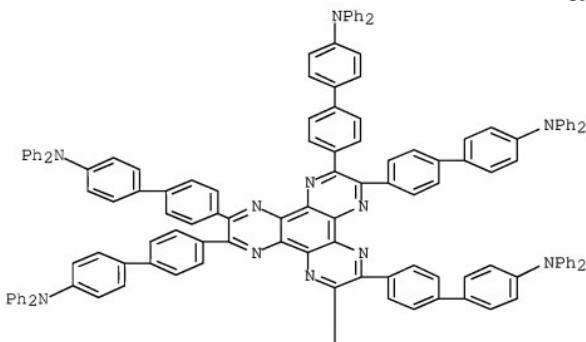
LA English

AB This paper reports unique and unusual formations of columnar liq. crystals and organogels by self-assembling discotic mols., which are composed of an arom. hexaaazatriphenylene (HAT) core and six flexible arom. side chains. In HAT derivs. 3a, with 4'-(N,N-diphenylamino)biphenyl-4-yl chains, 3b, with 4'-(N-(2-naphthyl)-N-phenylamino)biphenyl-4-yl chains, and 3c, with 4'-phenoxybiphenyl-4-yl chains, the two-dimensional hexagonal packings can be created by their self-assembling in the liq. cryst. phase, which were characterized by polarizing optical microscopy, DSC, and x-ray diffraction anal. In certain solvents, HAT mols. 3a-c can form the viscoelastic fluid organogels, in which 1-dimensional aggregates composed of the HAT mols. are self-assembled and entangled into three-dimensional network structures. The organogel structures were analyzed by SEM observation, ¹H NMR, UV-visible, and CD spectroscopy. In contrast to 3a-c, none of the liq. cryst. and organogel phases could be formed from 3d and 3e with short arom. side chains including a phenylene spacer, and 3f (except a few specific solns.) and 3g

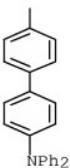
without terminal diarylamino and phenoxy groups. In 3a-c, the arom. side chains with terminal flexible groups make up soft regions that cooperatively stabilize the liq. cryst. and organogel supramol. structures together with the hard regions of the hexaazatriphenylene core.

- IT 847755-75-3P 847755-76-4P
(prepn., liq. crystal properties and supramol. assemblies in formation of organogels from)
- RN 847755-75-3 HCA
- CN [1,1'-Biphenyl]-4-amine,
4',4'',4''',4''''',4'''''',4'''''''-dipyrazino[2,3-f:2',3'-h]quinoxaline-2,3,6,7,10,11-hexaylhexakis[N,N-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



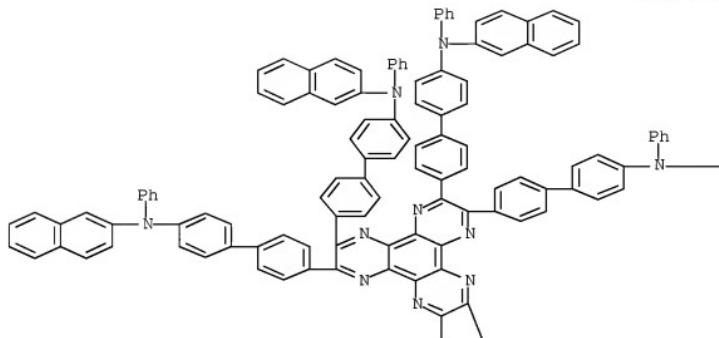
PAGE 2-A



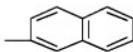
RN 847755-76-4 HCA

CN 2-Naphthalenamine, N,N',N'',N''',N'''',N''''-[dipyrazino[2,3-f:2',3'-h]quinoxaline-2,3,6,7,10,11-hexaylhexakis([1,1'-biphenyl]-4',4-diyl)]hexakis[N-phenyl- (9CI) (CA INDEX NAME)

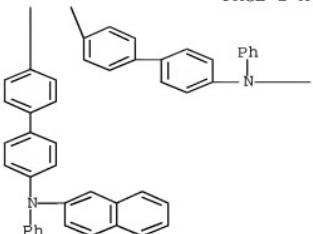
PAGE 1-A



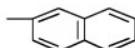
PAGE 1-B



PAGE 2-A



PAGE 2-B



IT 847755-75-3P 847755-76-4P
(prepn., liq. crystal properties and supramol. assemblies in formation of organogels from)
OSC.G 41 THERE ARE 41 CAPLUS RECORDS THAT CITE THIS RECORD (43 CITINGS)
RE.CNT 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 8 OF 13 HCA COPYRIGHT 2010 ACS on STN
AN 138:229184 HCA Full-text
TI Heat-developable photographic film with improved silver tone
IN Hanyu, Takeshi
PA Konica Co., Japan
SO Jpn. Kokai Tokkyo Koho, 25 pp.
CODEN: JKXXAF

DT Patent

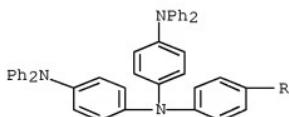
LA Japanese

FAN.CNT 1

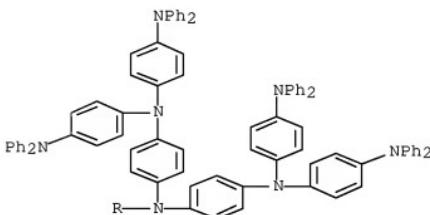
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003075955	A	20030312	JP 2001-265695	20010903
PRAI JP 2001-265695		20010903		

OS MARPAT 138:229184
 AB The material comprising a support coated with an image-forming layer contg. photosensitive Ag halide, an org. Ag salt, a reducing agent, a binder, and a star-burst mol. compd. A₁B_{1-n}B₂n₂B₃n₃...B_nn (A₁, B_{1-n} = 3- to 6-valent atom or atoms to form a ring; n₁ = 3-6; n_{2-n} = 2-6). The material shows high sensitivity, low fog, improved Ag tone, and scratch resistance.
 IT 501015-68-5 501015-70-9
 (heat-developable photog. film contg. star-burst mol. compd.)
 RN 501015-68-5 HCA
 CN 1,4-Benzenediamine, N1,N1-bis[4-[bis[4-(diphenylamino)phenyl]amino]phenyl]-N4,N4-bis[4-(diphenylamino)phenyl]- (CA INDEX NAME)

PAGE 1-A

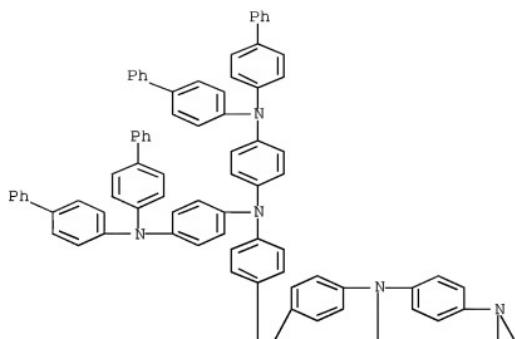


PAGE 2-A

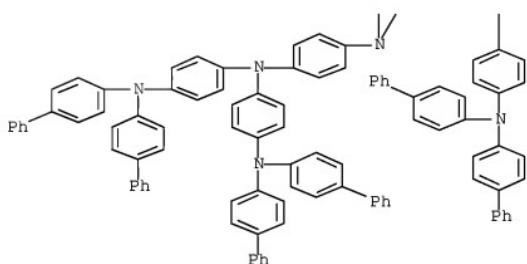


RN 501015-70-9 HCA
 CN 1,4-Benzenediamine, N,N-bis[4-[bis([1,1'-biphenyl]-4-yl)amino]phenyl]-N',N'-bis[4-[bis[4-[bis([1,1'-biphenyl]-4-yl)amino]phenyl]amino]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



PAGE 2-B

—Ph

IT 501015-68-5 501015-70-9

(heat-developable photog. film contg. star-burst mol. compd.)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L50 ANSWER 9 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 136:118797 HCA Full-text

TI Controlled Cyclotrimerization in Hyperbranched Polymer Synthesis

AU Higuchi, Masayoshi; Kanazawa, Hirohiko; Tsuruta, Masanori; Yamamoto, Kimihisa

CS Department of Chemistry Faculty of Science Technology, Keio University, Yokohama, 223-8522, Japan

SO Macromolecules (2001), 34(26), 8847-8850

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

AB Cyclization in hyperbranched polymer synthesis was first controlled on the basis of a steric effect using a Lewis acid with a bulky ligand. Only phenylazomethine oligomers having a cyclic structure were formed during the polymn. of 4,4'-diaminobenzophenone in the presence of TiCl₄(THF)₂ as a Lewis acid with bulky ligands. The structure of a cavity in an isolated cyclic oligomer was detd. by X-ray crystal anal. Controlled cyclization is applied for hyperbranched polymer synthesis, and a novel dendrimer with a cyclic structure was quant. obtained via controlled cyclization on the basis of a steric effect using a monomer with a bulky dendron.

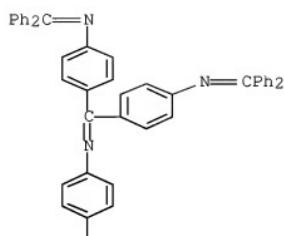
IT 391593-64-9P

(in controlled cyclotrimerization for hyperbranched polymer synthesis)

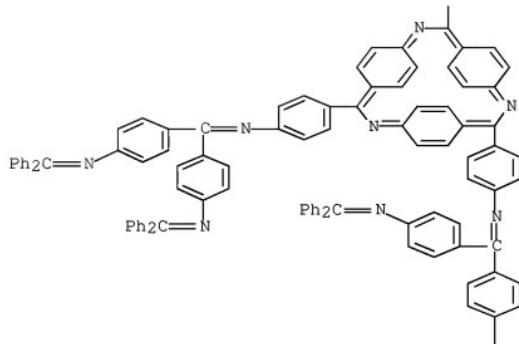
RN 391593-64-9 HCA

CN Benzenamine, 4,4',4'''-(2,8,14-triazatetracyclo[14.2.2.24,7.210,13]tetracosa-2,4,6,8,10,12,14,16,18,19,21,23-dodecaene-3,9,15-triyl)tris[N-[bis[4-(diphenylmethylene)amino]phenyl]methylene]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A





IT 391593-64-9P

(in controlled cyclotrimerization for hyperbranched polymer synthesis)

OSC.G 20 THERE ARE 20 CAPLUS RECORDS THAT CITE THIS RECORD (20 CITINGS)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 10 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 1321347976 HCA Full-text

TI Palladium-catalyzed synthesis of triarylamine macromolecules

AU Hartwig, John F.

CS Department of Chemistry, New Haven, CT, 06520-8107, USA

SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2000), 41(1), 420-421
CODEN: ACPAY; ISSN: 0032-3934

PB American Chemical Society, Division of Polymer Chemistry

DT Journal

LA English

AB In general, the palladium-catalyzed amination methodol. could be applied to prep. a wide variety of arylamines, but the formation of clean polymeric triarylamines required the proper choice of ligand. Phosphine-free polymer could be prep'd. by using tri-tert-Bu phosphine or tris(trimethoxymethylphenyl) phosphine. Careful selection of reaction conditions and protective groups led to the formation of clean dendrimeric and linear oligomers contg. only triarylamine linkages. Reactions of simple dibromoarenes and phenylenediamines readily formed macrocyclic structures.

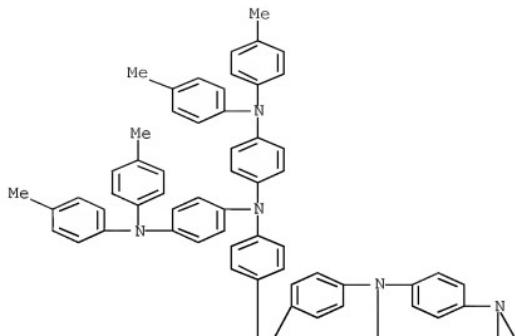
IT 198026-07-2P

(prepn. of triarylamine macromols. with palladium catalysts)

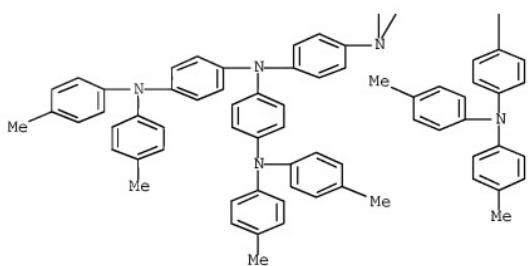
RN 198026-07-2 HCA

CN 1,4-Benzenediamine, N1,N1-bis[4-[bis[4-[bis(4-methylphenyl)amino]phenyl]amino]phenyl]-N4,N4-bis[4-[bis(4-methylphenyl)amino]phenyl]- (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



PAGE 2-B

—Me

IT 198026-07-2P

(prepns. of triarylamine macromols. with palladium catalysts)

OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 11 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 131:19388 HCA Full-text

TI The synthesis of triarylamine macromolecules by palladium-catalyzed amination of aryl halides

AU Hartwig, John F.; Goodson, Felix E.; Louie, Janis; Hauck, Sheila

CS Department of Chemistry, New Haven, CT, 06520-8107, USA

SO Polymeric Materials Science and Engineering (1999), 80,
41-42

CODEN: PMSEDG; ISSN: 0743-0515

PB American Chemical Society

DT Journal

LA English

AB Phosphite-free polymer was prepd. by using tri-tert-butylphosphine or tris(trimethoxymethylphenyl)phosphine. Careful selection of reaction conditions and protective groups led to the formation of clean dendritic and linear oligomers contg. only triarylamine linkages.

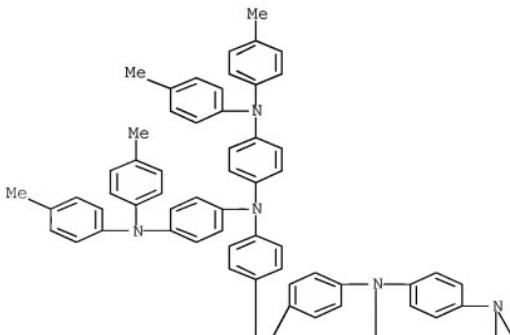
IT 198026-07-2P

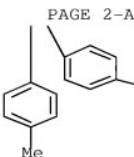
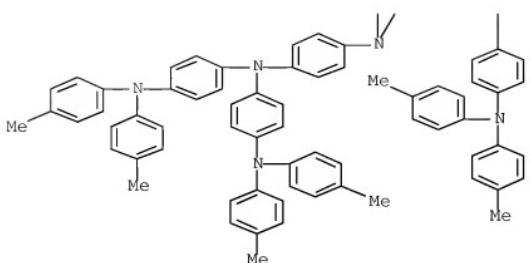
(dendrimer; the synthesis of triarylamine macromols. by palladium-catalyzed amination of aryl halides)

RN 198026-07-2 HCA

CN 1,4-Benzenediamine, N1,N1-bis[4-[bis[4-[bis(4-methylphenyl)amino]phenyl]amino]phenyl]-N4,N4-bis[4-[bis(4-methylphenyl)amino]phenyl]- (CA INDEX NAME)

PAGE 1-A





PAGE 2-B

Me

IT 198026-07-2P

(dendrimer; the synthesis of triarylamine macromols. by palladium-catalyzed amination of aryl halides)

OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)
RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 12 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 128:173587 HCA Full-text

OREF 128:34101a,34104a

TI A novel class of π -electron dendrimers for thermally and morphologically stable amorphous molecular materials

AU Katsuma, Katsuhiko; Shirota, Yasuhiko

CS Department Applied Chemistry, Faculty Engineering, Osaka University, Suita, 565, Japan

SO Advanced Materials (Weinheim, Germany) (1998), 10(3), 223-226

CODEN: ADVMEW; ISSN: 0935-9648

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

AB The novel org. hyperbranched π -electron systems, 1,3,5-tris[N-(4'-methylbiphenyl-4-yl)-N-(4-diphenylaminophenyl)amino]benzene (TDAB-G1(a)) and 1,3,5-tris[N-[4-bis(4-methylphenyl)aminophenyl]-N-(4-diphenylaminophenyl)amino]benzene (TDAB-G1(b)), were synthesized via the Ullmann reaction and characterized by 1H-, 13C-NMR, electron absorption spectroscopy, and elemental anal. TDAB-G1(a) was obtained as a polycryst. material, whereas TDAB-G1(b) was an amorphous glass. DSC anal. of TDAB-G1(a) gave a m.p. of 187°. When the melted sample was cooled in air, a glass was formed spontaneously. Reheating of the glass sample resulted in a glass transition at $T_g = 128^\circ$ giving a supercooled liq. Likewise, the amorphous repprd. sample of TDAB-G1(b) exhibited a glass transition at $T_g = 134^\circ$ when heated. Unique multiredox processes involving as many as 6- and 9-electron reversible oxidns. were obsd. in the cyclic voltammograms of TDAB-G1(a) and TDAB-G1(b), resp. TDAB-G1(b) was used as a hole-transport material in a multilayer org. LED consisting of the double-hole transport layer and an emitting layer which contained N,N'-diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine (TPD) doped with rubrene as the emitting material and with tris(8-quinolinolato) Al as the electron transport material. This device emitted yellow light and the electroluminescence showed a peak at 560 nm in agreement with the luminescence peak of rubrene.

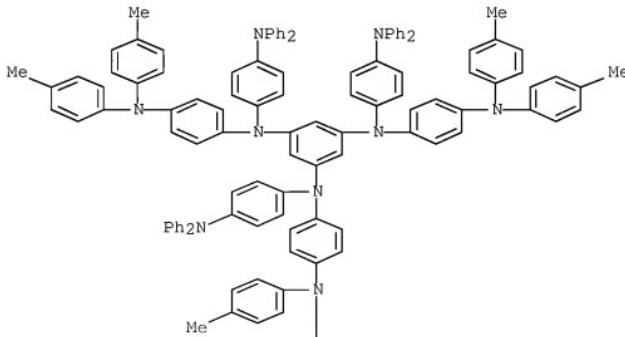
IT 874946-05-1P

(A novel class of π -electron dendrimers for thermally and morphologically stable amorphous molecular materials)

RN 874946-05-1 HCA

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-[bis(4-methylphenyl)amino]phenyl]-N1,N3,N5-tris[4-(diphenylamino)phenyl]-
(CA INDEX NAME)

PAGE 1-A





IT 874946-05-1P

(A novel class of π -electron dendrimers for thermally and morphologically stable amorphous molecular materials)

OSC.G 113 THERE ARE 113 CAPLUS RECORDS THAT CITE THIS RECORD (113 CITINGS)

L50 ANSWER 13 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 127:331861 HCA Full-text

OREF 127:65185a,65188a

TI Discrete High Molecular Weight Triarylamine Dendrimers Prepared by Palladium-Catalyzed Amination

AU Louie, Janis; Hartwig, John F.; Fry, Albert J.

CS Department of Chemistry, Yale University, New Haven, CT, 06520-8107, USA

SO Journal of the American Chemical Society (1997), 119(48), 11695-11696

CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

OS CASREACT 127:331861

AB Electronically interesting triarylamine dendrimers previously prepd. in modest yields were synthesized in high yields. The first generation dendrimer 4,4',4"-tris(N,N-diphenylamino)triphenylamine (TDATA) was prepd. from tris(4-bromophenyl)amine and 3.3 equiv of lithium diphenylamide in the presence of 2 mol % Pd[P(o-tolyl)3]2. The high-yield formation of triarylamines by palladium-catalyzed chem. was used to produce high mol. wt. arylamines with high glass transition temps., low redox potentials, and the ability to produce delocalized radical cations.

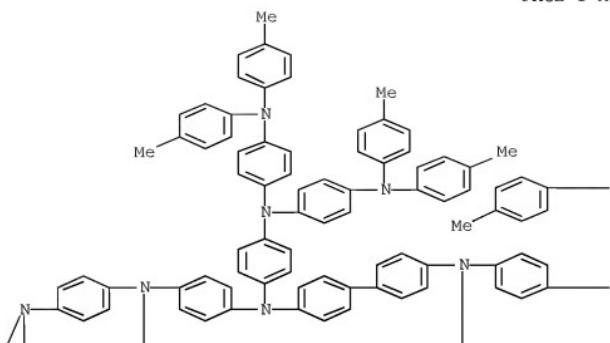
IT 198026-08-3P

(palladium-catalyzed amination synthesis of discrete high mol. wt. triarylamine dendrimers and their oxidn. properties)

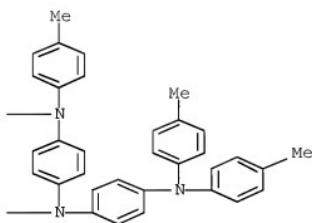
RN 198026-08-3 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4-[bis[4-(4-methylphenyl)amino]phenyl]amino]phenyl]- (CA INDEX NAME)

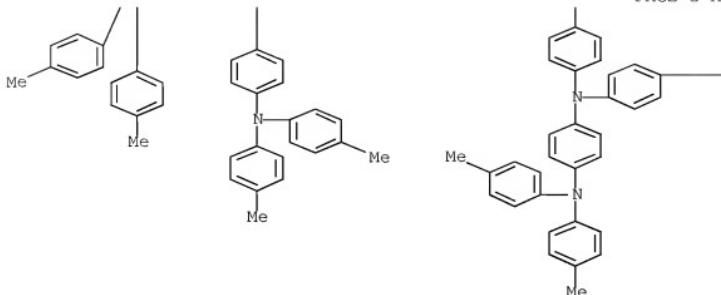
PAGE 1-A



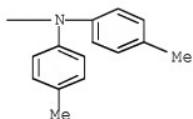
PAGE 1-B



PAGE 2-A



PAGE 2-B



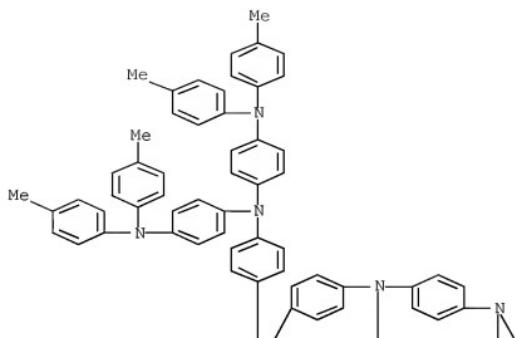
IT 198026-07-2P

(second generation dendrimer; palladium-catalyzed amination
synthesis of discrete high mol. wt. triarylamine dendrimers and
their oxidn. properties)

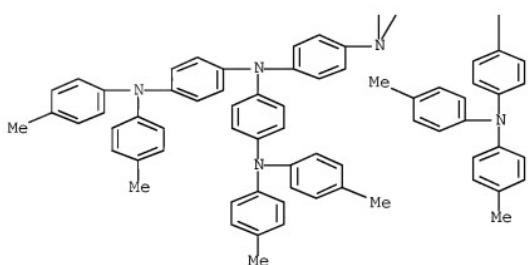
RN 198026-07-2 HCA

CN 1,4-Benzenediamine, N1,N1-bis[4-[bis(4-methylphenyl)amino]phenyl]amino]phenyl]-N4,N4-bis[4-[bis(4-methylphenyl)amino]phenyl]- (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



PAGE 2-B

—Me

IT 198026-08-3P
(palladium-catalyzed amination synthesis of discrete high mol. wt.
triarylamine dendrimers and their oxidn. properties)
IT 198026-07-2P
(second generation dendrimer; palladium-catalyzed amination
synthesis of discrete high mol. wt. triarylamine dendrimers and
their oxidn. properties)
OSC.G 133 THERE ARE 133 CAPLUS RECORDS THAT CITE THIS RECORD (133
CITINGS)

=> D L62 1-2 BIB ABS HITSTR HITIND

L62 ANSWER 1 OF 2 HCA COPYRIGHT 2010 ACS on STN
AN 147:154181 HCA Full-text
TI Compounds useful as hole transporter for electronic devices
IN Radu, Nora Sabina; Johansson, Gary A.; Herron, Norman; Gehret, Troy C.
PA E. I. du Pont de Nemours and Company, USA
SO PCT Int. Appl., 46 pp.
CODEN: PIXXD2

DT Patent
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2007079101	A2	20070712	WO 2006-US49336	20061227
	WO 2007079101	A3	20071108		
	US 20070232782	A1	20071004	US 2006-643293	20061221
	EP 1976822	A2	20081008	EP 2006-848199	20061227
	JP 2009522273	T	20090611	JP 2008-548698	20061227
	KR 2008084848	A	20080919	KR 2008-718524	20080728
PRAI	US 2005-754976P	P	20051229		
	WO 2006-US49336	W	20061227		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

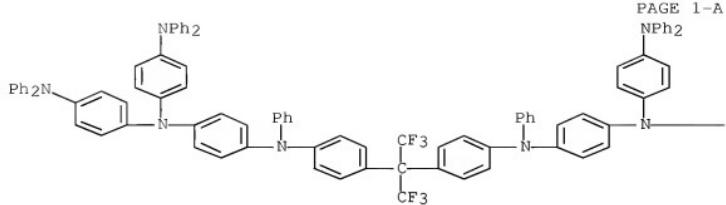
OS MARPAT 147:154181

AB The present invention relates to novel compds. and polymers, compns.
comprising novel compds. or polymers, and electronic devices comprising at
least one layer contg. the compd. or polymer.

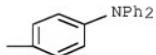
IT 943768-02-3P
(compds. useful as hole transporter for electronic devices)

RN 943768-02-3 HCA

CN 1,4-Benzenediamine, N1,N1'-[{2,2,2-trifluoro-1-
(trifluoromethyl)ethylidene]di-4,1-phenylene]bis[N4,N4-bis[4-
(diphenylamino)phenyl]-N1-phenyl- (CA INDEX NAME)



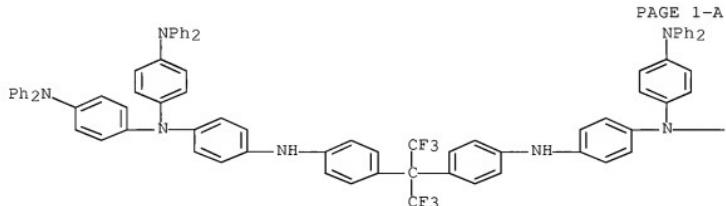
PAGE 1-B

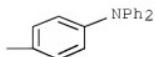


IT 943768-01-2P 943768-03-4P
 (prepn. of compds. useful as hole transporter for electronic devices)

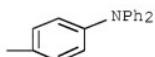
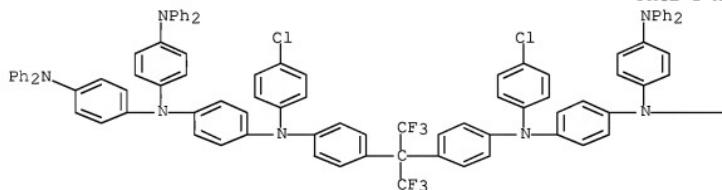
RN 943768-01-2 HCA

CN 1,4-Benzenediamine, N1,N1'-[{2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]di-4,1-phenylene}bis[N4,N4-bis[4-(diphenylamino)phenyl]- (CA INDEX NAME)]





RN 943768-03-4 HCA
 CN 1,4-Benzenediamine, N1,N1'-[{2,2,2-trifluoro-1-(trifluoromethyl)ethylidene}di-4,1-phenylene]bis[N1-(4-chlorophenyl)-N4,N4-bis[4-(diphenylamino)phenyl]- (CA INDEX NAME)



IPCI C07C0211-54 [I,A]; C07C0211-00 [I,C]; C07C0211-54 [I,A]; C08G0073-00 [I,C]; C08G0073-02 [I,A]; H01B0001-12 [I,C]; H01B0001-12 [I,A]
 IPCR C07C0211-00 [I,C]; C07C0211-54 [I,A]; C08G0073-00 [I,C]; C08G0073-02 [I,A]; H01B0001-12 [I,C]; H01B0001-12 [I,A]
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST hole transporter electroluminescent display
 IT Electroluminescent devices
 (displays; compds. useful as hole transporter for electronic

devices)
 IT Luminescent screens
 (electroluminescent; compds. useful as hole transporter
 for electronic devices)
 IT 943768-02-3P
 (compds. useful as hole transporter for electronic devices)
 IT 123173-98-8P 943768-01-2P 943768-03-4P
 (prepn. of compds. useful as hole transporter for electronic
 devices)

L62 ANSWER 2 OF 2 HCA COPYRIGHT 2010 ACS on STN

AN 126:164231 HCA Full-text

OREF 126:31619a,31622a

TI Hole-transporting material and organic electroluminescent
 device and electrophotographic photoreceptor using it
 IN Tamano, Michiko; Onikubo, Shunichi; Enokida, Toshio
 PA Toyo Ink Mfg Co, Japan
 SO Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF

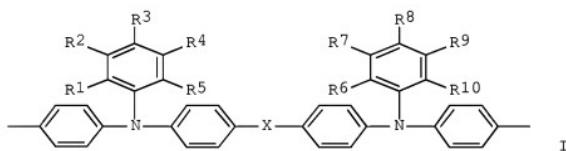
DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08314169	A	19961129	JP 1995-121026	19950519
	JP 3640090	B2	20050420		
PRAI	JP 1995-121026		19950519		

GI



AB The title material has the general formula HA(BA)_nBAH [A = diamine deriv.
 residue I; R1-10 = H, halo, (substituted) alkyl, (substituted) alkoxy,
 (substituted) thioalkoxy, CN, (mono- or di-substituted) amino, OH, SH,
 (substituted) aryloxy, (substituted) arylthio, (substituted) arom. ring,
 (substituted) heterocyclic ring (these adjacent substituents may form
 aliph., arom. or heterocyclic rings which may be substituted); X = O , S,
 Se; B = linking group CYZ; Y, Z = H, halo, (substituted) alkyl,
 (substituted) arom. ring, (substituted) heterocyclic ring, Y and Z may form
 an aliph., arom. or heterocyclic ring which may be substituted; n = 1-5000].

The electroluminescent device, comprising ≥ 1 org. compd. thin film-made luminescent layers sandwiched between a pair of electrodes, contains the material in ≥ 1 of the layers. The photoreceptor contains a charge-generating material and the pos. hole-transporting material on a conductive support. The electroluminescent device shows high luminescent efficiency, brightness, and durability and the photoreceptor gives clear images in repeated use.

IT 186672-00-4 186672-07-1 186672-09-3

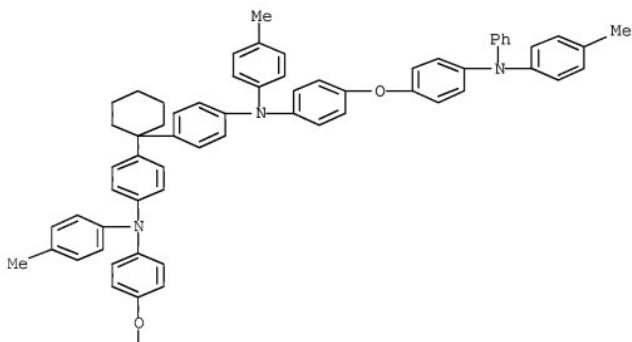
186672-10-6

(electrophotog. photoreceptor and electroluminescent device contg. arom. polyamine hole-transporting material)

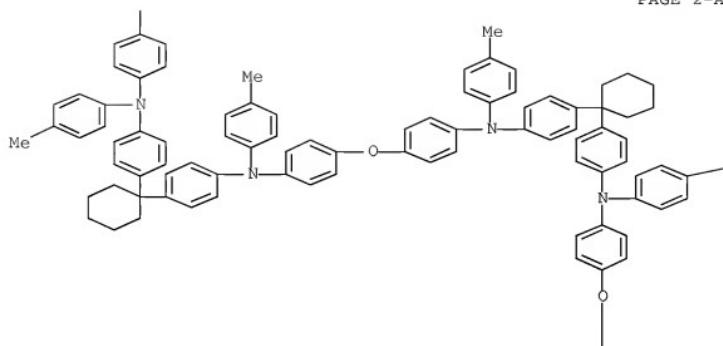
RN 186672-00-4 HCA

CN Benzenamine, 4,4'-cyclohexylidenebis[N-(4-methylphenyl)-N-[4-[4-[(4-methylphenyl)[4-[1-[4-(4-methylphenyl)[4-[4-[(4-methylphenyl)phenylamino]phenoxy]phenyl]amino]phenyl]cyclohexyl]phenyl]amino]phenoxy]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



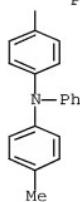
PAGE 2-A



PAGE 2-B

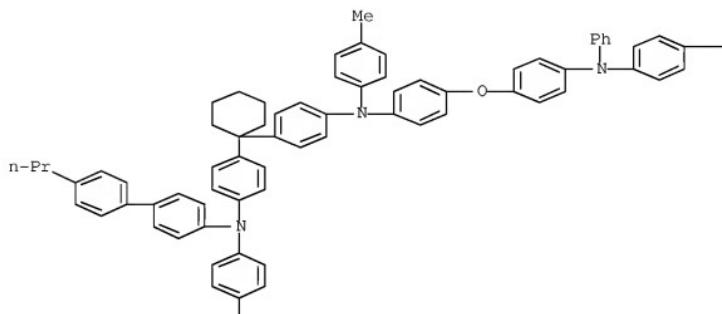
—Me

PAGE 3-A

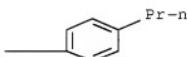


RN 186672-07-1 HCA
CN [1,1'-Biphenyl]-4-amine, N-[4-[4-[(4-methylphenyl)[4-[1-[4-[4-[(4-methylphenyl)phenylamino]phenoxy]phenyl](4'-propyl[1,1'-biphenyl]-4-yl)amino]phenyl]cyclohexyl]phenyl]amino]phenoxy]phenyl](4'-propyl[1,1'-biphenyl]-4-yl)amino]phenyl]cyclohexyl]phenyl]amino]phenoxy]phenyl]-N-[4-[1-[4-[(4-methylphenyl)[4-[4-[phenyl(4'-propyl[1,1'-biphenyl]-4-yl)amino]phenoxy]phenyl]amino]phenyl]cyclohexyl]phenyl]-4'-propyl-(9CI) (CA INDEX NAME)

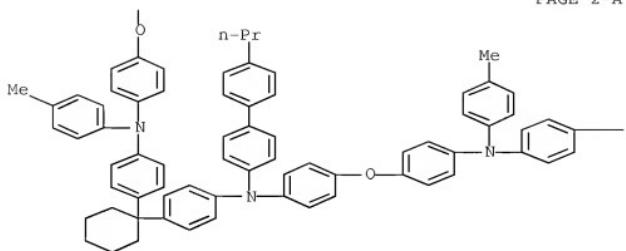
PAGE 1-A



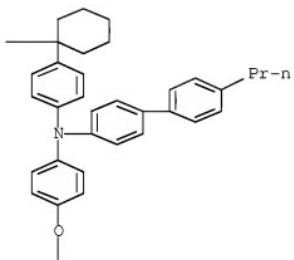
PAGE 1-B

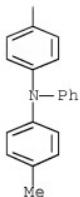


PAGE 2-A

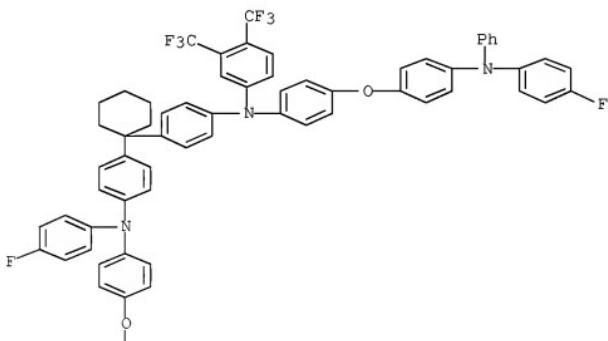


PAGE 2-B

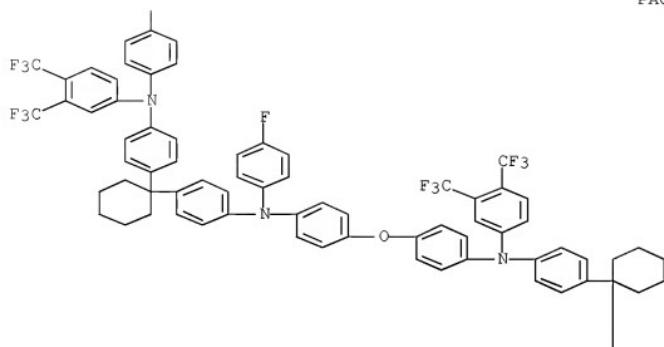




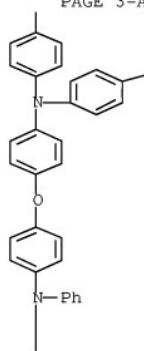
RN 186672-09-3 HCA
 CN Benzenamine, N-[4-[4-[1-[4-[4-[4-[1-[4-[1-[4-[1-[3,4-
 bis(trifluoromethyl)phenyl][4-[4-[4-[4-[1-[4-[1-[4-[1-[4-[1-[3,4-
 bis(trifluoromethyl)phenyl]amino]phenoxy]phenyl]amino]phenyl]cyclohexyl]phenyl]
](4-fluorophenyl)amino]phenoxy]phenyl][3,4-
 bis(trifluoromethyl)phenyl]amino]phenoxy]phenyl](4-
 fluorophenyl)amino]phenoxy]phenyl]-N-[4-[1-[4-[4-[4-[1-[4-[1-[4-[1-[4-[1-[3,4-
 bis(trifluoromethyl)phenyl]amino]phenoxy]phenyl]amino]phenyl]cyclohexyl]phenyl](4-
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 (9CI) (CA INDEX NAME)



PAGE 2-A



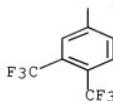
PAGE 3-A



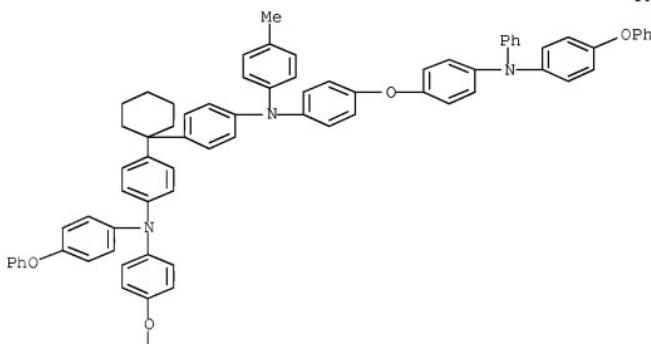
PAGE 3-B

—F

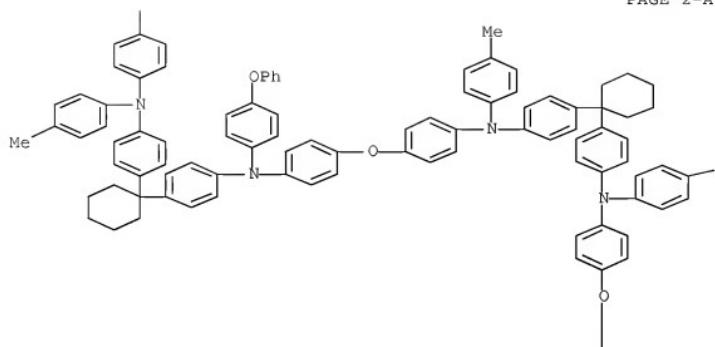
PAGE 4-A



PAGE 1-A



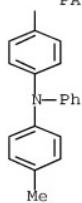
PAGE 2-A



PAGE 2-B



PAGE 3-A



CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 73
 ST hole transporting agent arom polyamine; electrophotog photoreceptor
 polyamine pos hole transporter; electroluminescent device
 polyamine pos hole transporter
 IT Polyamines
 (arom.; electrophotog. photoreceptor and electroluminescent
 device contg. arom. polyamine hole-transporting material)
 IT Electroluminescent devices
 Electrophotographic photoconductors (photoreceptors)
 (electrophotog. photoreceptor and electroluminescent
 device contg. arom. polyamine hole-transporting material)
 IT 186671-99-8 186672-00-4 186672-01-5 186672-02-6
 186672-03-7 186672-04-8 186672-05-9 186672-06-0
 186672-07-1 186672-08-2 186672-09-3
 186672-10-6 186811-51-8
 (electrophotog. photoreceptor and electroluminescent
 device contg. arom. polyamine hole-transporting material)
 IT 186671-98-7P
 (electrophotog. photoreceptor and electroluminescent
 device contg. arom. polyamine hole-transporting material)

=> D L33 1-22 BIB ABS HITSTR HITIND

L33 ANSWER 1 OF 22 HCA COPYRIGHT 2010 ACS on STN
 AN 146:472315 HCA Full-text
 TI Method for manufacture of organic electroluminescent element
 and organic electroluminescent element and display, and
 illuminating device
 IN Taka, Hideo; Tanaka, Tatsuo; Suzurizato, Yoshiyuki; Kita, Hiroshi
 PA Konica Minolta Holdings, Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 107pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

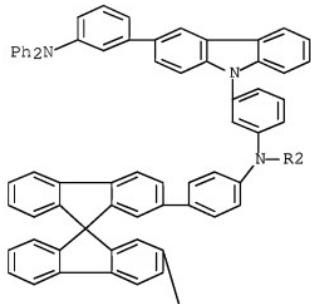
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2007110097	A	20070426	JP 2006-246467	20060912
PRAI	JP 2005-266661	A	20050914		
AB	The title element comprises org. layers between the cathode and the anode, wherein ≥1 of the org. layers contains purifiable medium-mol. compd. or low-mol. polymers and the layer has a d. of 1.10-1.25 g/cm ³ . The element can be manufd. by coating method. The element shows long service life and can be driven at low voltages.				
IT	934972-66-4 (light-emitting layer; manuf. of org.				

electroluminescence elements and displays and illuminating devices)

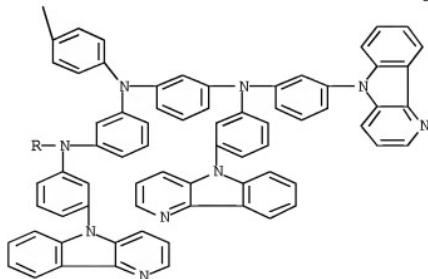
RN 934972-66-4 HCA

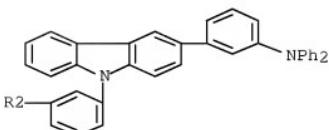
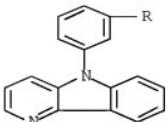
CN 1,3-Benzenediamine, N1-[4-[2'-(4-[bis[3-[3-(diphenylamino)phenyl]9H-carbazol-9-yl]phenyl]amino)phenyl]-9,9'-spirobi[9H-fluoren]-2-yl]phenyl]-N1-[3-[bis[3-(5H-pyrido[3,2-b]indol-5-yl)phenyl]amino]phenyl]-N3,N3-bis[3-(5H-pyrido[3,2-b]indol-5-yl)phenyl]- (CA INDEX NAME)

PAGE 1-A



PAGE 2-A





- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 73
 ST org electroluminescent element display
 IT Electroluminescent devices
 (displays; manuf. of org. electroluminescence elements
 and displays and illuminating devices)
 IT Luminescent screens
 (electroluminescent; manuf. of org.
 electroluminescence elements and displays and illuminating
 devices)
 IT Light sources
 (manuf. of org. electroluminescence elements and displays
 and illuminating devices)
 IT 934972-69-7 934972-70-0 934972-71-1 934972-72-2
 (hole transport material; manuf. of org.
 electroluminescence elements and displays and illuminating
 devices)
 IT 220859-81-4 550378-78-4 693794-98-8 728045-12-3 929539-56-0
 929539-58-2 934972-65-3 934972-66-4 934972-68-6
 (light-emitting layer; manuf. of org.
 electroluminescence elements and displays and illuminating
 devices)
- L33 ANSWER 2 OF 22 HCA COPYRIGHT 2010 ACS on STN
 AN 143:485611 HCA Full-text
 TI Green-emitting electroluminescent structure with improved

IN thermal stability containing luminescent oxyquinolate zinc complex
PA Yakushchenko, I. K.; Kaplunov, M. G.; Krasnikova, S. S.; Efimov, O. N.
PA Institut Problem Khimicheskoi Fiziki Rossiiskoi Akademii Nauk, Russia
SO Russ., 5 pp.
CODEN: RUXXE7
DT Patent
LA Russian
FAN.CNT 1

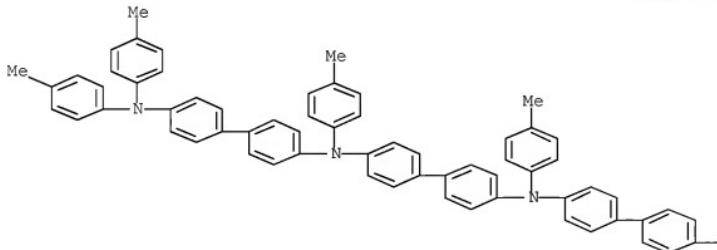
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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FRAI RU 2004-122577		20040726		

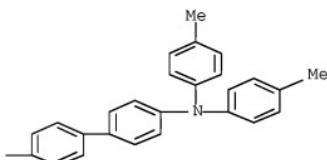
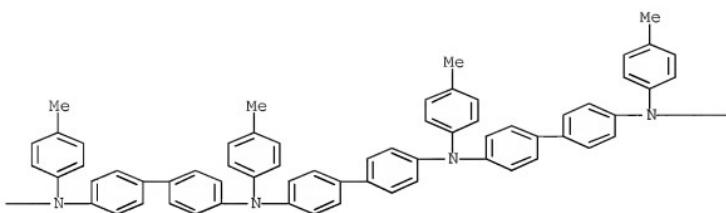
OS MARPAT 143:485611
AB Electroluminescent structure is described which comprises of an injecting layer, a metal chelate complex-based active luminescent layer, a hole-transition layer and a hole-injecting layer, where the luminescent is selected from zinc 8-hydroxy-2-methoxyquinolate and zinc 8-hydroxy-2-methylquinolate. The electroluminescent structure shows emission in the green spectral region and has an increased heat resistance.

IT 869580-55-2 869580-57-4
(hole-transporting layer; green-emitting electroluminescent structure with improved thermal stability contg. luminescent zinc oxyquinolate complex)

RN 869580-55-2 HCA
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-(4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl]N4,N4'-bis(4-methylphenyl)- (CA INDEX NAME)

PAGE 1-A

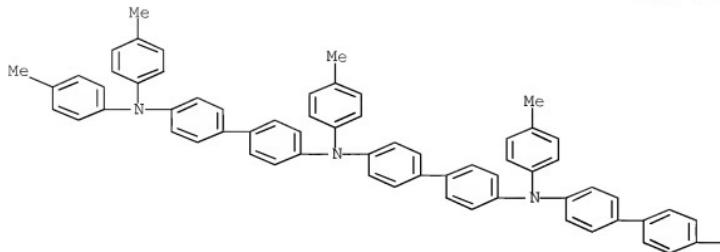




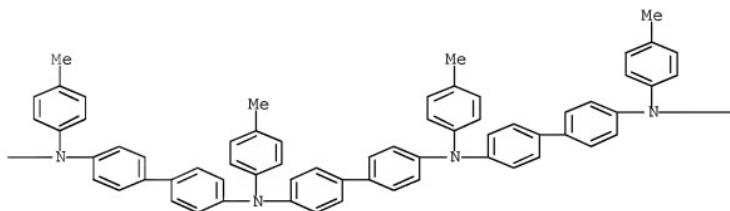
RN 869580-57-4 HCA

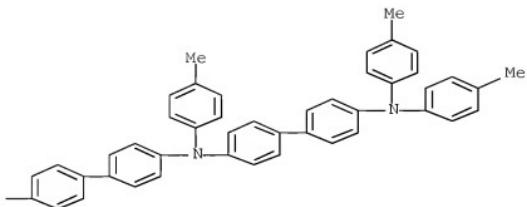
CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-[4'-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4'-[4'-[4'-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4,N4'-bis(4-methylphenyl)- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B





- IPCI C09K0011-06 [ICM,7]; C07F0003-06 [ICS,7]; C07F0003-00 [ICS,7,C*];
C07D0215-24 [ICS,7]; C07D0215-00 [ICS,7,C*]
IPCR C09K0011-06 [I,C*]; C09K0011-06 [I,A]; C07D0215-00 [I,C*]; C07D0215-24
[I,A]; C07F0003-00 [I,C*]; C07F0003-06 [I,A]
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
ST green electroluminescent device zinc hydroxy methoxyquinolate OLED; zinc hydroxy methylquinolate green electroluminescent device OLED
IT Luminescent substances
(electroluminescent, green-emitting; green-emitting electroluminescent structure with improved thermal stability contg. luminescent zinc oxyquinolate complex)
IT Electroluminescent devices
(green-emitting electroluminescent structure with improved thermal stability contg. luminescent zinc oxyquinolate complex)
IT Electroluminescent devices
(green-emitting; green-emitting electroluminescent structure with improved thermal stability contg. luminescent zinc oxyquinolate complex)
IT 117665-21-1
(green-emitting electroluminescent structure with improved thermal stability contg. luminescent zinc oxyquinolate complex)
IT 14128-73-5P 267417-43-6P
(green-emitting electroluminescent structure with improved thermal stability contg. luminescent zinc oxyquinolate complex)
IT 50926-11-9, Indium tin oxide 65181-78-4, TPD
(green-emitting electroluminescent structure with improved thermal stability contg. luminescent zinc oxyquinolate complex and)
IT 77-78-1, Dimethylsulphate 148-24-3, 8-Hydroxy quinoline, reactions
(green-emitting electroluminescent structure with

improved thermal stability contg. luminescent zinc oxyquinolate complex prepd. using)
 IT 1127-45-3P, 8-Hydroxy quinoline-1-oxide 6686-05-1P 74668-72-7P
 (green-emitting electroluminescent structure with improved thermal stability contg. luminescent zinc oxyquinolate complex prepd. using)
 IT 869580-55-2 869580-57-4
 (hole-transporting layer; green-emitting electroluminescent structure with improved thermal stability contg. luminescent zinc oxyquinolate complex)

L33 ANSWER 3 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 143:469728 HCA Full-text

TI Organic compound for electroluminescent device

IN Schaefer, Thomas; Bardon, Kristina

PA Ciba Specialty Chemicals Holding Inc., Switz.

SO PCT Int. Appl., 57 pp.

CODEN: PIXXD2

DT Patent

LA English

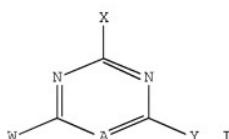
FAN.CNT 1

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PI	WO 2005105950	A1	20051110	WO 2005-EP51731	20050420
	CA 2562416	A1	20051110	CA 2005-2562416	20050420
	EP 1743011	A1	20070117	EP 2005-747379	20050420
	CN 1950479	A	20070418	CN 2005-80013601	20050420
	BR 2005010482	A	20071106	BR 2005-10482	20050420
	JP 2007534722	T	20071129	JP 2007-510020	20050420
	US 20080199726	A1	20080821	US 2006-587691	20061026
	IN 2006CN03974	A	20070727	IN 2006-CN3974	20061030
	KR 2007010191	A	20070122	KR 2006-725158	20061129
PRAI	EP 2004-101826	A	20040429		
	WO 2005-EP51731	W	20050420		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

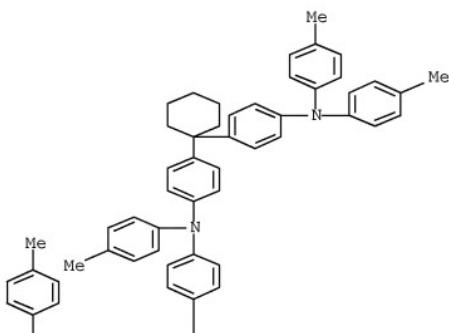
OS MARPAT 143:469728

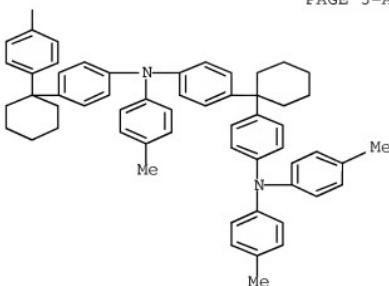
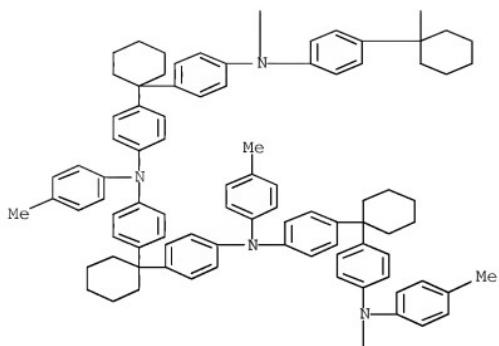
GI



- AB A org. compd. is described by the general formula I (where A = CH, N; X,W,Y = (independently) arom. groups described in the text). An electroluminescent devices using the org. compd. is also described.
- IT 754980-67-1
 (hole transporting layer; triazine or pyrimidine compds. for electroluminescent device)
- RN 754980-67-1 HCA
- CN Benzenamine, 4,4'-cyclohexylidenebis[N-[4-[1-[4-[[4-[1-[4-[[4-[1-[4-[bis(4-methylphenyl)amino]phenyl]cyclohexyl]phenyl](4-methylphenyl)amino]phenyl]cyclohexyl]phenyl](4-methylphenyl)amino]phenyl]cyclohexyl]phenyl]-N-(4-methylphenyl)- (9CI)
 (CA INDEX NAME)

PAGE 1-A





IPCI C09K0011-06 [ICM, 7]; H05B0033-14 [ICS, 7]; C07D0239-26 [ICS, 7];
C07D0239-00 [ICS, 7, C*]

IPCR C07D0239-00 [I, C*]; C07D0239-26 [I, A]; C09K0011-06 [I, C*]; C09K0011-06
[I, A]; H01L0051-05 [I, C*]; H01L0051-30 [I, A]; H05B0033-14 [I, C*];
H05B0033-14 [I, A]

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 22, 76

ST electroluminescent device triazine pyrimidine compd

IT **Electroluminescent devices**
 (triazine or pyrimidine compds. for electroluminescent
 device)
 IT 2085-33-8, Alq3 14855-54-0 58280-31-2 93555-65-8 146162-64-3
 188049-36-7 188049-37-8
 (electron transporting layer; triazine or pyrimidine compds. for
 electroluminescent device)
 IT 58328-31-7 124729-98-2, 4,4'4''-Tris(N-(3-methylphenyl)-N-
 phenylamino)triphenylamine
 (hole injecting layer; triazine or pyrimidine compds. for
 electroluminescent device)
 IT 58473-78-2 65181-78-4 123847-85-8 151026-65-2 166444-98-0
 754980-63-7 754980-64-8 754980-65-9 754980-66-0
 754980-67-1
 (hole transporting layer; triazine or pyrimidine compds. for
 electroluminescent device)
 IT 517-51-1 1047-16-1 1450-63-1 51325-91-8 99762-78-4
 144810-07-1 210485-42-0
 (light emitting layer; triazine or pyrimidine
 compds. for electroluminescent device)
 IT 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole
 (triazine or pyrimidine compds. for electroluminescent
 device)
 IT 863878-53-9P 869016-09-1P 869016-10-4P
 (triazine or pyrimidine compds. for electroluminescent
 device)
 IT 13438-50-1, 3-Bromo-fluoranthene 58536-47-3 61676-62-8,
 2-Isopropoxy-4,4,5,5-tetramethyl-1,3,2-dioxaborolane 460347-59-5
 (triazine or pyrimidine compds. for electroluminescent
 device)

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 4 OF 22 HCA COPYRIGHT 2010 ACS on STN
 AN 143:335935 HCA Full-text
 TI Organic **electroluminescent** devices with arylamine
 hole-injecting and hole-transporting materials
 IN Lee, Kyung Hoon; Seo, Jeong Dae; Jeong, Hyun Cheol; Park, Chun Gun;
 Kim, Jung Keun; Kim, Sung Kab
 PA LG Electronics Inc., S. Korea; LG Display Co., Ltd.
 SO U.S. Pat. Appl. Publ., 60 pp.
 CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20050208334	A1	20050922	US 2005-84021	20050321
	US 7576484	B2	20090818		
KR	2005094195	A	20050927	KR 2004-19356	20040322
EP	1586616	A2	20051019	EP 2005-5801	20050317
	EP 1586616	A3	20070704		

CN 1674747	A	20050928	CN 2005-10056457	20050322
CN 100468822	C	20090311		
JP 2005276832	A	20051006	JP 2005-81539	20050322
JP 4231491	B2	20090225		
PRAI KR 2004-19356	A	20040322		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 143:335935

AB Org. electroluminescent devices comprising an anode, a hole-injecting layer, a hole-transporting layer, an emitting layer, and a cathode are described in which the hole-injecting and hole-transporting layers are formed of materials are described by the general formula R1R2N-p-C6H4N(Ph)-p-C6H4[N(Ph)-p-C6H4]nN(Ph)-p- C6H4NR1R2 (n = 1-4; and R1 and R2 = (un)substituted arom., hetero ring, aliph., or H).

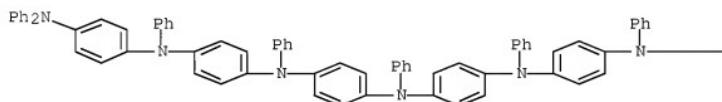
IT 865150-90-9 865150-96-5 865150-98-7
 865151-01-5 865151-02-6 865151-03-7
 865151-04-8 865151-05-9 865151-06-0
 865151-07-1

(org. electroluminescent devices with arylamine
 hole-injecting and hole-transporting materials)

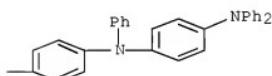
RN 865150-90-9 HCA

CN 1,4-Benzenediamine, N1,N4-bis[4-[[4-[[4-(
 (diphenylamino)phenyl]phenylamino]phenyl]phenylamino]phenyl]-N1,N4-
 diphenyl- (CA INDEX NAME)

PAGE 1-A



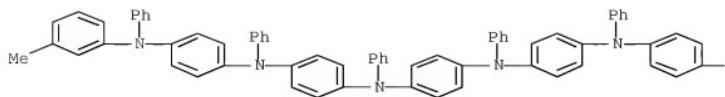
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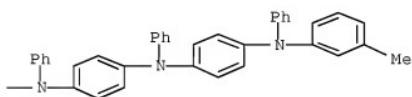
RN 865150-96-5 HCA

CN 1,4-Benzenediamine, N1,N4-bis[4-[[4-[[4-[(3-
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 N1,N4-diphenyl- (CA INDEX NAME)

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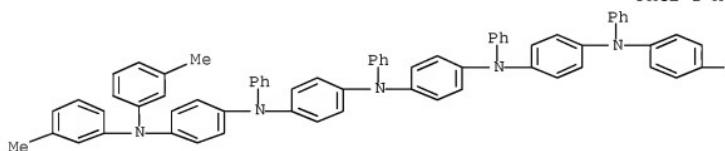
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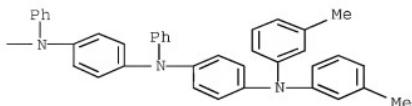
RN 865150-98-7 HCA

CN 1,4-Benzenediamine, N1,N4-bis[4-[[4-[[4-[bis(3-methylphenyl)amino]phenyl]phenylamino]phenyl]phenylamino]-N1,N4-diphenyl- (CA INDEX NAME)

PAGE 1-A

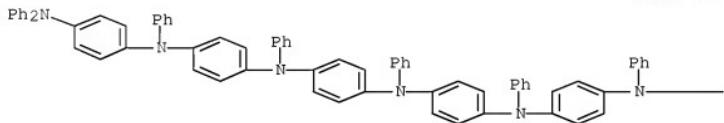


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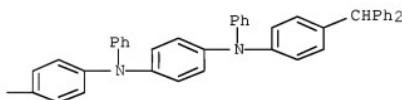


RN 865151-01-5 HCA
CN 1,4-Benzenediamine, N-[4-[(4-
(diphenylamino)phenyl]phenylamino]phenyl]phenylamino]phenyl]-N'-[4-[(4-
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henylamino]phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

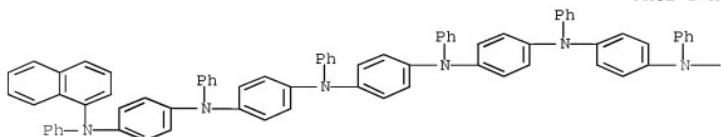


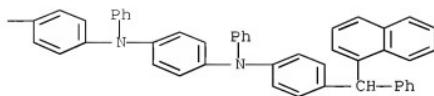
PAGE 1-B



RN 865151-02-6 HCA
CN 1,4-Benzenediamine, N-[4-[(4-[(4-(1-naphthalenylphenylamino)phenyl]phenylamino)phenyl]phenylamino]phenyl]-N'-(4-[(4-[(4-(1-naphthalenylphenylmethyl)phenyl]phenyl)phenylamino]phenyl)phenylamino]phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)

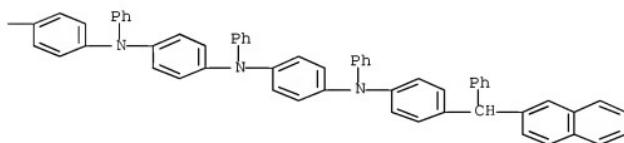
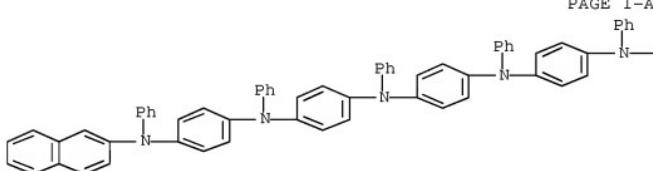
PAGE 1-A





RN 865151-03-7 HCA

CN 1,4-Benzenediamine, N-[4-[[4-[[4-(2-naphthalenylphenylamino)phenyl]phenylamino]phenyl]phenylamino]phenyl]-N'-[4-[[4-[[4-(2-naphthalenylphenylmethyl)phenyl]phenylamino]phenyl]phenylamino]phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)

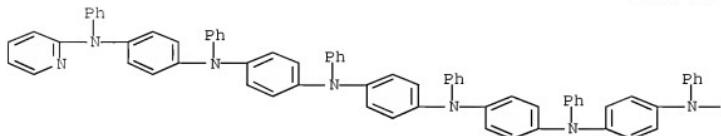


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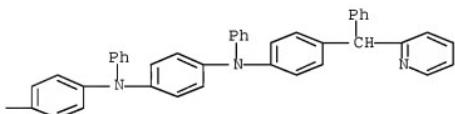
CN 1,4-Benzenediamine, N,N'-diphenyl-N-[4-[phenyl[4-[phenyl[4-[phenyl[2-pyridinylmethyl)phenyl]phenyl]amino]phenyl]amino]phenyl]amino]phenyl

1]-N'-[4-[phenyl[4-[phenyl[4-(phenyl-2-pyridinylamino)phenyl]amino]phenyl]amino]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



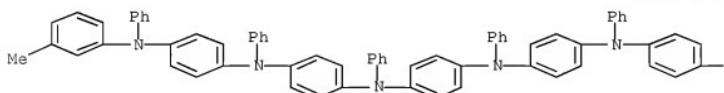
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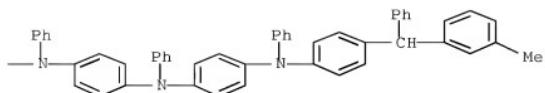
RN 865151-05-9 HCA

CN 1,4-Benzenediamine, N-[4-[(4-[(3-methylphenyl)phenylamino]phenyl]phenylamino]phenyl]-N'-[4-[(4-[(4-[(3-methylphenyl)phenylmethyl]phenyl]phenylamino)phenyl]phenylamino]phenyl]phenylamino]phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



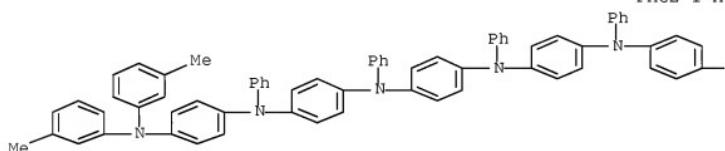
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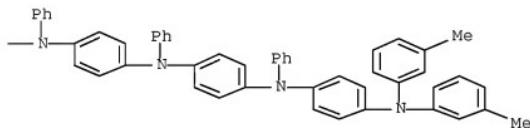
RN 865151-06-0 HCA

CN 1,4-Benzenediamine, N1-[4-[[4-[(bis(3-methylphenyl)amino)phenyl]phenylamino]phenyl]-N4-[4-[(4-[(4-[(3-methylphenyl)amino]phenyl)phenylamino]phenyl)phenylamino]phenyl]-N1,N4-diphenyl- (CA INDEX NAME)

PAGE 1-A



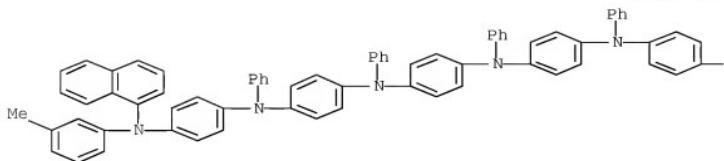
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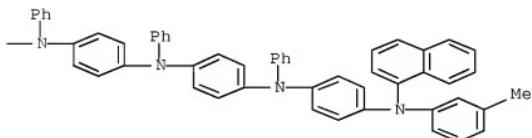
RN 865151-07-1 HCA

CN 1,4-Benzenediamine, N1-[4-[[4-[(3-methylphenyl)-1-naphthalenylamino]phenyl]phenylamino]phenyl]-N4-[4-[(4-[(4-[(3-methylphenyl)-1-naphthalenylamino]phenyl)phenylamino]phenyl)phenylamino]phenyl]-N1,N4-diphenyl- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25, 76

ST org electroluminescent device hole injecting transporting material arylamine deriv

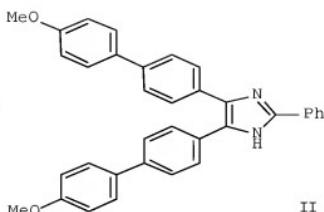
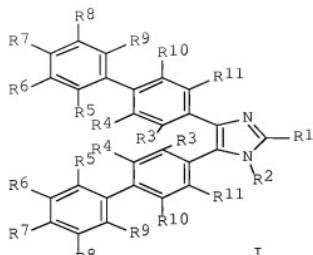
IT Electroluminescent devices
(org.; org. electroluminescent devices with arylamine hole-injecting and hole-transporting materials)

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	865150-06-7	865150-07-8	865150-08-9	865150-09-0	865150-10-3
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 865151-02-6 865151-03-7 865151-04-8
 865151-05-9 865151-06-0 865151-07-1
 865151-08-2
 (org. electroluminescent devices with arylamine
 hole-injecting and hole-transporting materials)
 IT 865150-22-7P
 (org. electroluminescent devices with arylamine
 hole-injecting and hole-transporting materials)
 IT 62-53-3, Aniline, reactions 74-31-7,
 N,N'-Diphenyl-1,4-phenylenediamine 106-37-6, 1,4-Dibromobenzene
 122-39-4, Diphenylamine, reactions
 (org. electroluminescent devices with arylamine
 hole-injecting and hole-transporting materials)
 IT 19606-98-5P 36809-26-4P, (4-Bromophenyl)diphenylamine 525602-17-9P
 (org. electroluminescent devices with arylamine
 hole-injecting and hole-transporting materials)
 OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)
 RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 5 OF 22 HCA COPYRIGHT 2010 ACS on STN
 AN 143:286429 HCA Full-text
 TI Process for preparation of 2,4,5-triarylimidazole and
 1,2,4,5-tetraarylimidazole derivatives as electroluminescent
 materials
 IN Mataka, Shuntaro; Hatta, Taizo
 PA Nissan Chemical Industries, Ltd., Japan
 SO PCT Int. Appl., 28 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2005085208	A1	20050915	WO 2005-JP3110	20050225
PRAI JP 2004-65342	A	20040309		
OS CASREACT 143:286429; MARPAT 143:286429				
GI				



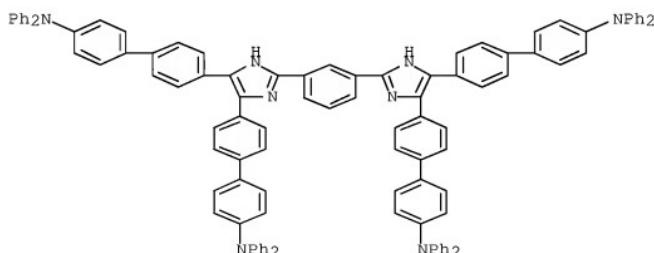
AB This invention pertains to a method for producing 2,4,5-triarylimidazole and 1,2,4,5-tetraarylimidazole derivs. I [wherein R1 = (un)substituted Ph, Naphthyl, or biphenyl; R2 = H, (un)substituted Ph, or Naphthyl; R3, R4, R10, and R11 = independently H, halo, alkoxy, etc.; R5-R9 = independently H, Ph, halo, etc.]. For example, 4,4'-bis[4-(4-methoxyphenyl)benzoyl] was reacted with benzaldehyde and ammonium acetate in acetic acid to give II (76%). I are useful as electroluminescent materials.

IT 864186-20-9P

(prepn. of imidazole derivs. as electroluminescent materials)

RN 864186-20-9 HCA

CN [1,1'-Biphenyl]-4-amine, 4'-[2-[3-[4,5-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-1H-imidazol-2-yl]phenyl]-4-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-1H-imidazol-5-yl]-N,N-diphenyl- (CA INDEX NAME)



IPCI C07D0233-64 [ICM, 7]; C07D0233-00 [ICM, 7,C*]; C09K0011-06 [ICS, 7]; H05B0033-14 [ICS, 7]

IPC C07D0233-00 [I,C*]; C07D0233-64 [I,A]; C09K0011-06 [I,C*]; C09K0011-06

[I,A]; H01L0051-50 [N,C*]; H01L0051-50 [N,A]; H05B0033-14 [I,C*];
H05B0033-14 [I,A]

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
Section cross-reference(s): 25, 73

ST prepn phenyl amino imidazole electroluminescent material
solar cell

IT Luminescent substances
(electroluminescent; prepn. of imidazole derivs. as
electroluminescent materials)

IT Electroluminescent devices
Solar cells
(prepn. of imidazole derivs. as electroluminescent
materials)

IT 36741-16-9P 864186-21-0P
(intermediate; prepn. of imidazole derivs. as
electroluminescent materials)

IT 14221-01-3, Tetrakis(triphenylphosphine)palladium
(prepn. of imidazole derivs. as electroluminescent
materials)

IT 864186-14-1P 864186-15-2P 864186-16-3P 864186-17-4P
864186-18-5P 864186-19-6P 864186-20-9P
(prepn. of imidazole derivs. as electroluminescent
materials)

IT 62-53-3, Aniline, reactions 66-99-9, 2-Naphthalenecarboxaldehyde
100-52-7, Benzaldehyde, reactions 105-07-7 626-19-7,
1,3-Benzendicarboxaldehyde 1122-91-4 35578-47-3 201802-67-7
864186-22-1
(prepn. of imidazole derivs. as electroluminescent
materials)

OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 6 OF 22 HCA COPYRIGHT 2010 ACS on STN
AN 143:27021 HCA Full-text

TI Synthesis of diphenylamine-substituted phenylazomethine dendrimers and
the performance of organic light-emitting diodes

AU Cho, Jun-Sang; Kimoto, Atsushi; Higuchi, Masayoshi; Yamamoto, Kimihisa
CS Department of Chemistry, Faculty of Science & Technology, Keio
University, Yokohama, 223-8522, Japan

SO Macromolecular Chemistry and Physics (2005), 206(6), 635-641
CODEN: MCHPES; ISSN: 1022-1352

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA English

AB Novel diphenylamine-substituted phenylazomethine dendrimers (DP-Gn, n = 1,2)
were designed and synthesized as hole-transport materials for org. light-
emitting diodes (OLEDs). These dendrimers similar to phenylazomethine
dendrimers showed a stepwise metal complexation with metal ions. They have
good multi-redox properties attributed to the terminal amine moieties and
excellent thermal stabilities. Double layer electroluminescent (EL)
devices using the dendrimers as a hole-transport material and Alq3 as the

emitting and electron transport materials were fabricated. The EL performances of the devices increased with higher dendrimer generations. Moreover, by using the metal ion (0.5 equiv. SnCl₂)-complexed DP-G2 dendrimers, the luminance and EL efficiency of the devices were drastically increased by more than double and over 30%, resp. These metal complexable phenylazomethine dendrimers are novel and promising materials for highly efficient OLEDs.

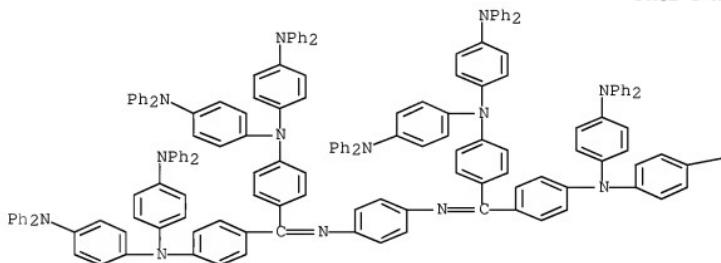
IT 852992-10-0DP, tin complexes 852992-10-0P

(synthesis of diphenylamine-substituted phenylazomethine dendrimers and their performance as hole transport layer in light-emitting diodes)

RN 852992-10-0 HCA

CN 1,4-Benzenediamine, N1,N4-bis[bis[4-[bis[4-(diphenylamino)phenyl]amino]phenyl]methylene]- (CA INDEX NAME)

PAGE 1-A



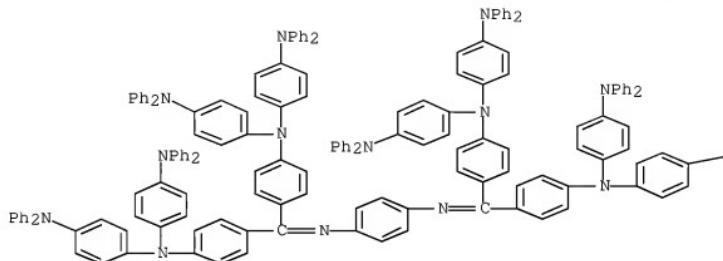
PAGE 1-B

—NPh₂

RN 852992-10-0 HCA

CN 1,4-Benzenediamine, N1,N4-bis[bis[4-[bis[4-(diphenylamino)phenyl]amino]phenyl]methylene]- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

—NPh₂

CC 35-10 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 73

ST phenylamine substituted phenylazomethine dendrimer prepn property;
light emitting diode phenylazomethine dendrimer

IT Polyazomethines
(dendrimers; synthesis of diphenylamine-substituted
phenylazomethine dendrimers and their performance as hole transport
layer in light-emitting diodes)

IT Cyclic voltammetry
Glass transition temperature
HOMO (molecular orbital)
Oxidation potential
Thermal stability

UV and visible spectra
(of diphenylamine-substituted phenylazomethine dendrimers for use
as hole transport layer in light-emitting
diodes)

IT Dendritic polymers
(polyazomethines; synthesis of diphenylamine-substituted
phenylazomethine dendrimers and their performance as hole transport
layer in light-emitting diodes)

IT Electroluminescent devices
Luminescence, electroluminescence
(synthesis of diphenylamine-substituted phenylazomethine dendrimers
and their performance as hole transport layer in light-emitting
diodes)

IT 2873-76-9P 852992-06-4P
(dendron; in synthesis of diphenylamine-substituted
phenylazomethine dendrimers and their performance as hole transport
layer in light-emitting diodes)

IT 280-57-9, 1,4-Diazabicyclo[2.2.2]octane 7550-45-0, Titanium
tetrachloride, uses
(in synthesis of diphenylamine-substituted phenylazomethine
dendrimers and their performance as hole transport layer in
light-emitting diodes)

IT 62-53-3, Aniline, reactions 106-50-3, p-Phenylenediamine, reactions
591-50-4, Iodobenzene 611-98-3, 4,4'-Diaminobenzophenone
(in synthesis of diphenylamine-substituted phenylazomethine
dendrimers and their performance as hole transport layer in
light-emitting diodes)

IT 7440-31-5DP, Tin, complexes with diphenylamine-substituted
phenylazomethine dendrimer 852992-07-5P 852992-08-6P
852992-09-7P 852992-10-0DP, tin complexes
852992-10-0P
(synthesis of diphenylamine-substituted phenylazomethine dendrimers
and their performance as hole transport layer in light-emitting
diodes)

OSC.G 26 THERE ARE 26 CAPLUS RECORDS THAT CITE THIS RECORD (26
CITINGS)

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 7 OF 22 HCA COPYRIGHT 2010 ACS on STN
AN 143:16103 HCA Full-text
TI Phenylazomethine dendrimer complexes as novel hole-transporting
materials of organic light-emitting diodes
AU Cho, Jun-Sang; Takanashi, Kensaku; Higuchi, Masayoshi; Yamamoto,
Kimihisa
CS Department of Chemistry, Faculty of Science and Technology, Keio
University, Yokohama, 223-8522, Japan
SO Synthetic Metals (2005), 150(1), 79-82
CODEN: SYMEDZ; ISSN: 0379-6779
PB Elsevier B.V.
DT Journal
LA English

AB The EL (electroluminescence) performances of a double-layer org. light-emitting diodes (OLED) that used metal complexable phenylazomethine dendrimers (PAM-Gn, n = 1-5) as novel hole-transporting materials and tris-(8-hydroxyquinoline) Al (Alq3) as an emitter with electron-transport material, were demonstrated. The device that used PAM-G3 showed the highest EL performance compared to that of the other generations. Also, by using the metal ion (SnCl2) complexed PAM dendrimers as a hole-transporting layer, the luminance and the EL efficiency of the devices were drastically increased over those of the dendrimers. These results suggested a lower energy gap of the hole-transporting layer and/or increased the ohmic cond. of the layers by metal complexation. In particular, the optimum metal ion equiv. for the highest EL performance was dependent on the dendrimer generation.

IT

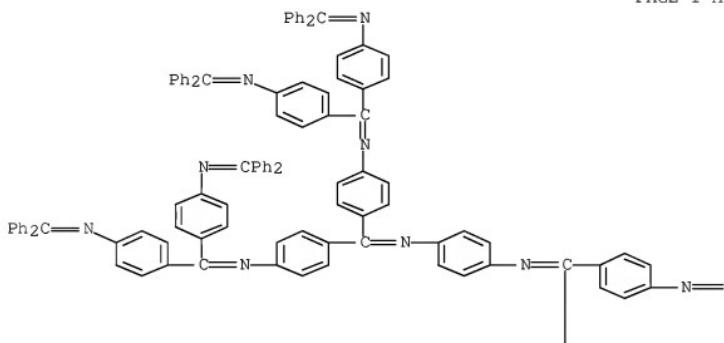
304019-01-0

(phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)

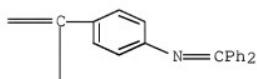
RN 304019-01-0 HCA

CN 1,4-Benzenediamine, N1,N4-bis[bis[4-[bis[4-[(diphenylmethylene)amino]phenyl]methylene]amino]phenyl]methylene]-
(CA INDEX NAME)

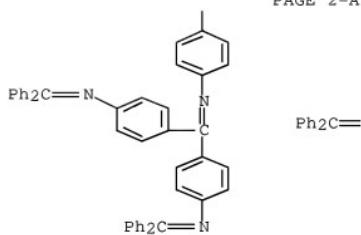
PAGE 1-A



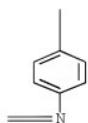
PAGE 1-B



PAGE 2-A



PAGE 2-B



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 35
ST phenylazomethine dendrimer metal complex hole transport light emitting diode
IT Hole transport
(materials; phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)
IT Complexation
Electroluminescent devices
(phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)
IT Dendritic polymers
(phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)
IT 50926-11-9, ITO
(anode; phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)
IT 7429-90-5, Aluminum, uses 13400-13-0, Cesium fluoride
(cathode; phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)
IT 106-50-3D, p-Phenylenediamine, reaction products with 4,4'-diaminobenzophenone homopolymer dendrimers, complex with tin ion 119-61-9D, Benzophenone, reaction products with 4,4'-diaminobenzophenone homopolymer dendrimers, complex with tin ion 304019-02-1D, 4,4'-Diaminobenzophenone homopolymer, complex with tin ion
(dendritic; phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)
IT 2085-33-8, Al 8q
(electron transporting material; phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)
IT 7772-99-8D, Tin dichloride, complexes with phenylazomethine dendrimer 304019-00-9 304019-00-9D, complex with tin ion 304019-01-0
(phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)
OSC.G 22 THERE ARE 22 CAPLUS RECORDS THAT CITE THIS RECORD (23 CITINGS)
RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 8 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 142:438382 HCA Full-text

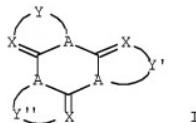
TI New organic compound and organic light emitting device using the same

IN Kim, Kong-Kyeom; Lee, Min-Jeong; Kim, Yeon-Hwan; Jang, Jun-Gi

PA Lg Chem, Ltd., S. Korea
SO PCT Int. Appl., 69 pp.
CODEN: PIXXD2

DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005037954	A1	20050428	WO 2004-KR2661	20041018
	KR 2005037378	A	20050421	KR 2004-82597	20041015
	TW 246356	B	20051221	TW 2004-93131461	20041015
	EP 1680479	A1	20060719	EP 2004-774798	20041018
	CN 1863891	A	20061115	CN 2004-80029288	20041018
	JP 2007512233	T	20070517	JP 2006-535273	20041018
	IN 2006KN0704	A	20070803	IN 2006-KN704	20060324
	IN 2009KN03404	A	20091218	IN 2009-KN3404	20090929
PRAI	KR 2003-72680	A	20031017		
	WO 2004-KR2661	W	20041018		
	IN 2006-KN704	A3	20060324		
OS	MARPAT 142:438382				
GI					



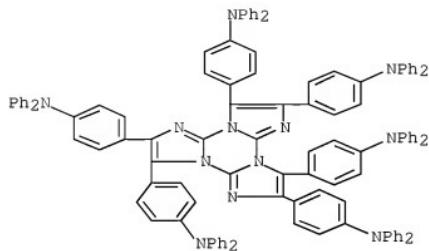
I

AB Org. compds. are claimed which are described by the general formula I (A = B or N; X = N or CR; R = H, halo, CN, NO₂, formyl, acetyl, benzoyl, amide, styryl, acetylene, quinoline, quinazoline, phenanthroline, cuproine, anthraquinone, benzoquinone, quinone, acridine, (un)substituted alkyl, (un)substituted aryl, (un)substituted aralkyl, (un)substituted arylamine, (un)substituted alkylamine, (un)substituted aralkylamine, or (un)substituted heterocyclic; and Y, Y' and Y'' = independently selected (un)substituted arom. heterocycle that includes a 5-membered arom. heterocycle contg. A and X as ring members or a 6-membered arom. heterocycle contg. A and X as ring members). The use of the compds. in org. light-emitting devices (e.g., as hole-injecting, hole-transporting, light-emitting, electron-transporting, electron-injecting, etc. materials) is also described, as are light-emitting devices using ≥1 of the materials in ≥1 layer.

IT 850581-59-8 850581-82-7
(org. compds. with heteroatom-contg. cyclic trimer cores and org. light-emitting devices using them)

RN 850581-59-8 HCA

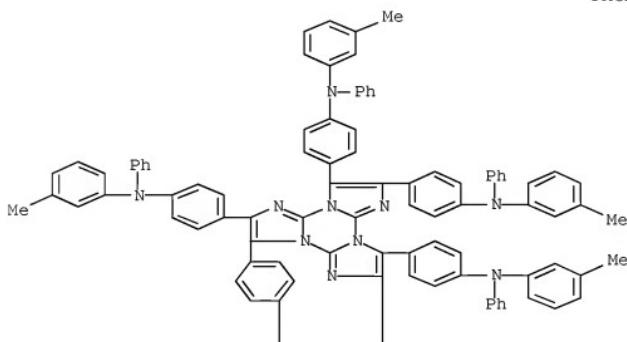
CN Benzenamine, 4-[2,6,7,10,11-pentakis[4-(diphenylamino)phenyl]triimidazo[1,2-a:1',2'-c:1'',2''-e][1,3,5]triazin-3-yl]-N,N-diphenyl- (CA INDEX NAME)

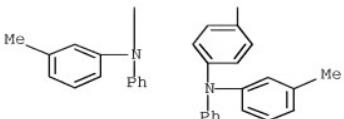


RN 850581-82-7 HCA

CN Benzenamine, N-(3-methylphenyl)-4-[2,6,7,10,11-pentakis[4-[(3-methylphenyl)phenylamino]phenyl]triimidazo[1,2-a:1',2'-c:1'',2''-e][1,3,5]triazin-3-yl]-N-phenyl- (CA INDEX NAME)

PAGE 1-A





- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 28, 76
- ST heteroatom contg cyclic trimer deriv light emitting device
- IT Electroluminescent devices
 (org.; org. compds. with heteroatom-contg. cyclic trimer cores and org. light-emitting devices using them)
- IT 1443-63-6 153448-23-8 848862-54-4 850581-44-1 850581-45-2
 850581-46-3 850581-47-4 850581-48-5 850581-49-6 850581-50-9
 850581-52-1 850581-53-2 850581-54-3 850581-55-4 850581-56-5
 850581-57-6 850581-58-7 850581-59-8 850581-60-1
 850581-61-2 850581-62-3 850581-63-4 850581-64-5 850581-65-6
 850581-66-7 850581-67-8 850581-68-9 850581-69-0 850581-70-3
 850581-71-4 850581-72-5 850581-73-6 850581-74-7 850581-75-8
 850581-76-9 850581-77-0 850581-79-2 850581-81-6
 850581-82-7
 (org. compds. with heteroatom-contg. cyclic trimer cores and org. light-emitting devices using them)
- IT 32833-13-9P 49855-18-7P 850581-43-0P 850581-51-0P 850581-83-8P
 (org. compds. with heteroatom-contg. cyclic trimer cores and org. light-emitting devices using them)
- IT 479-27-6, 1,8-Diaminonaphthalene 668-94-0, 4,5-Diphenylimidazole
 4857-06-1, 2-Chlorobenzimidazole 7726-95-6, Bromine, reactions
 7790-99-0, Iodine monochloride 10025-87-3, Phosphorus oxychloride
 153448-20-5
 (org. compds. with heteroatom-contg. cyclic trimer cores and org. light-emitting devices using them)
- IT 5157-11-9P, 1H-Perimidin-2(3H)-one 30837-50-4P, 2-Chloroperimidine
 683240-76-8P 850581-84-9P
 (org. compds. with heteroatom-contg. cyclic trimer cores and org. light-emitting devices using them)
- OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)
 RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 9 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 141:403311 HCA Full-text

TI 1,3,6,8-Tetrasubstituted pyrene compounds, organic electroluminescent device and organic electroluminescent display

IN Sotoyama, Wataru
PA Fujitsu Limited, Japan
SO PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004096743	A1	20041111	WO 2003-JP5417	20030428
	EP 1619177	A1	20060125	EP 2003-728002	20030428
	EP 1619177	B1	20080227		
	JP 4192152	B2	20081203	JP 2004-571293	20030428
	US 20050156164	A1	20050721	US 2005-74899	20050309
	US 7571894	B2	20090811		
PRAI	WO 2003-JP5417	W	20030428		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 141:403311

AB The invention refers to an org. electroluminescent device contg., as a luminescent material, a 1,3,6,8-tetrasubstituted pyrene compd. wherein the substituents are Ph rings contg. at least one of the following as a substituent: -NR6R7, -SiR8R9R10, -SR11, or -OR12 [R6-12 = H or substituent].

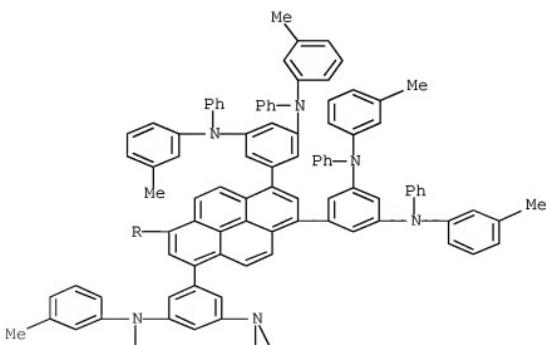
IT 790721-26-5P

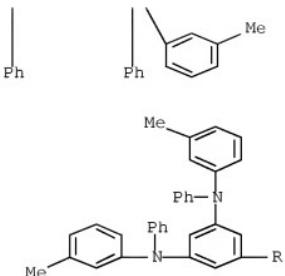
(1,3,6,8-tetrasubstituted pyrene compds., org.
electroluminescent device and org.
electroluminescent display)

RN 790721-26-5 HCA

CN 1,3-Benzenediamine, 5,5',5'',5'''-(1,3,6,8-pyrenetetrayl)tetraakis[N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A





- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST pyrene electroluminescent display device
- IT Luminescent substances
(1,3,6,8-tetrasubstituted pyrene compds., org. electroluminescent device and org. electroluminescent display)
- IT Electroluminescent devices
(displays; 1,3,6,8-tetrasubstituted pyrene compds., org. electroluminescent device and org. electroluminescent display)
- IT Luminescent screens
(electroluminescent; 1,3,6,8-tetrasubstituted pyrene compds., org. electroluminescent device and org. electroluminescent display)
- IT 129-00-0D, Pyrene, derivs.
(1,3,6,8-tetrasubstituted pyrene compds., org. electroluminescent device and org. electroluminescent display)
- IT 790721-24-3P 790721-25-4P 790721-26-5P
(1,3,6,8-tetrasubstituted pyrene compds., org. electroluminescent device and org. electroluminescent display)
- IT 128-63-2, 1,3,6,8-Tetrabromopyrene 1205-64-7 51067-38-0,
4-Phenoxyphenyl boronic acid 63503-60-6, 3-Chlorophenylboronic acid
67492-50-6, 3,5-Dichlorophenyl boronic acid
(1,3,6,8-tetrasubstituted pyrene compds., org. electroluminescent device and org. electroluminescent display)

electroluminescent display)
IT 790721-27-6P
(1,3,6,8-tetrasubstituted pyrene compds., org.
electroluminescent device and org.
electroluminescent display)
OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 10 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 141:268185 HCA Full-text

TI Organic electroluminescent devices

IN Hayoz, Pascal; Schaefer, Thomas; Bardon, Kristina

PA Ciba Specialty Chemicals Holding Inc., Switz.

SO PCT Int. Appl., 38 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004077885	A2	20040910	WO 2004-EP50146	20040218
	WO 2004077885	A3	20060706		
	CN 1867646	A	20061122	CN 2004-80005231	20040218
	JP 2007527361	T	20070927	JP 2006-502033	20040218
	US 20060135766	A1	20060622	US 2005-546683	20050823
	US 20090102373	A1	20090423	US 2008-316720	20081216
PRAI	EP 2003-100501	A	20030228		
	EP 2003-102360	A	20030730		
	WO 2004-EP50146	W	20040218		
	US 2005-546683	B1	20050823		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 141:268185

AB The present invention relates to electroluminescent devices which comprise org. light-emitting layers that contain triazine derivs. The triazine compds. are suitable components of blue-emitting, durable, organo-electroluminescent layers. The electroluminescent devices may be employed for full color display panels, for example, mobile phones, televisions and personal computer screens.

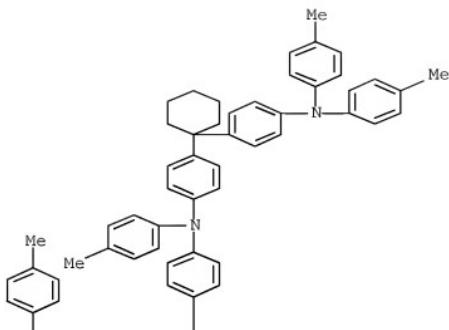
IT 754980-67-1

(org. electroluminescent devices)

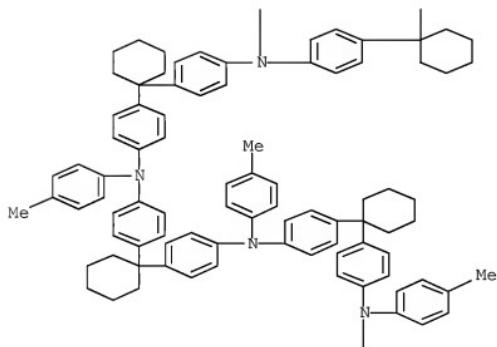
RN 754980-67-1 HCA

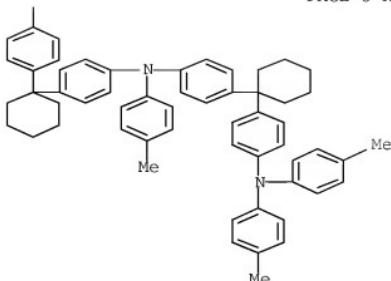
CN Benzenamine, 4,4'-cyclohexylidenebis[N-[4-[1-[4-[[4-[1-[4-[bis(4-methylphenyl)amino]phenyl]cyclohexyl]phenyl](4-methylphenyl)amino]phenyl]cyclohexyl]phenyl](4-methylphenyl)amino]phenyl]cyclohexyl]phenyl]-N-(4-methylphenyl)- (9CI)
(CA INDEX NAME)

PAGE 1-A



PAGE 2-A





CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 76
 ST triazine deriv org electroluminescent device
 IT Electroluminescent devices
 Glass substrates
 (org. electroluminescent devices)
 IT Polycarbonates, properties
 (org. electroluminescent devices)
 IT 58473-78-2 93555-65-8 151026-65-2 188049-37-8 188049-39-0
 754980-63-7 754980-64-8 754980-65-9 754980-66-0
 754980-67-1
 (org. electroluminescent devices)
 IT 517-51-1 1047-16-1 1450-63-1 51325-91-8 99762-78-4
 144810-07-1 210485-42-0
 (org. electroluminescent devices)
 IT 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole 1499-10-1 2085-33-8
 11099-20-0 37271-44-6 50926-11-9, ITO 58280-31-2 58328-31-7
 65181-78-4 123847-85-8 124729-98-2 146162-64-3 157682-41-2
 166444-98-0 188049-36-7
 (org. electroluminescent devices)
 IT 754980-61-5P
 (org. electroluminescent devices)
 IT 106-37-6, 1,4-Dibromobenzene 108-77-0, 2,4,6-Trichlorotriazine
 5122-94-1, 4-Biphenylboronic acid 30363-03-2 754980-62-6
 (org. electroluminescent devices)
 OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)
 RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT
 L33 ANSWER 11 OF 22 HCA COPYRIGHT 2010 ACS on STN
 AN 139:388585 HCA Full-text
 TI Static induction transistors made of electroconductive polymer such as

IN dendrimer
PA Yamahara, Motohiro; Fujii, Akiyoshi
PA Sharp Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 29 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003324203	A	20031114	JP 2002-129161	20020430
PRAI	JP 2002-129161			20020430	

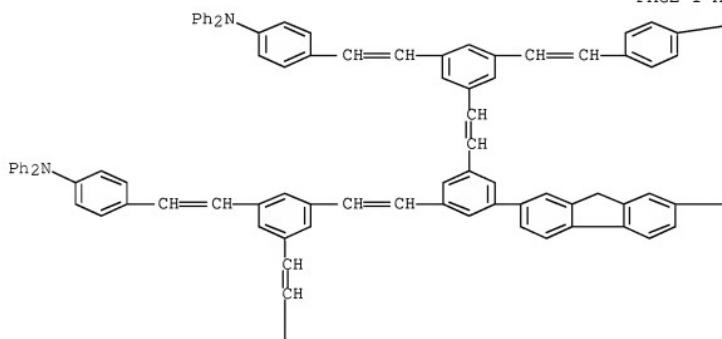
AB The invention relates to a static induction transistors having a semiconductor layer between a first electrode and a second electrode, wherein the semiconductor layer contains a highly branched polymer such as a dendrimer. The transistor shows the improved quality.

IT 623941-79-7 623941-80-0
(semiconductor layer of static Induction transistor)

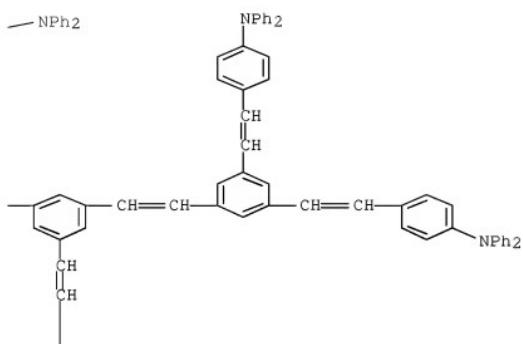
RN 623941-79-7 HCA

CN Benzenamine, 4,4',4'',4''',4'''',4''''',4''''''',4'''''''-[9H-fluorene-2,7-diylbis[5,1,3-benzenetriylbis(2,1-ethenediyl-5,1,3-benzenetriylid-2,1-ethenediyl)]octakis[N,N-diphenyl- (9CI) (CA INDEX NAME)

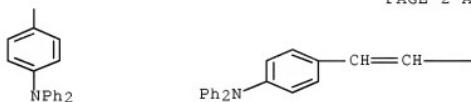
PAGE 1-A



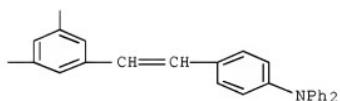
PAGE 1-B



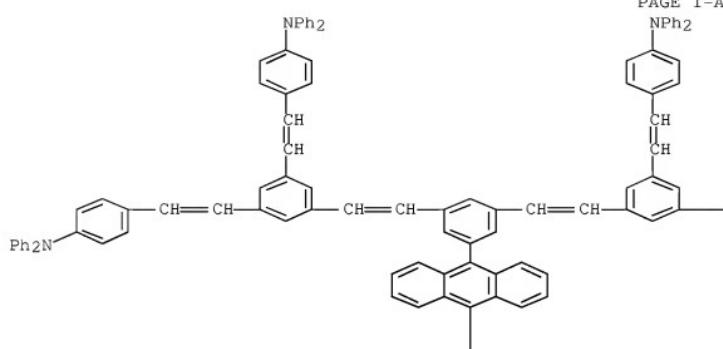
PAGE 2-A



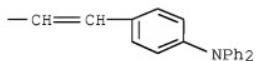
PAGE 2-B

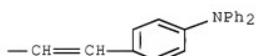
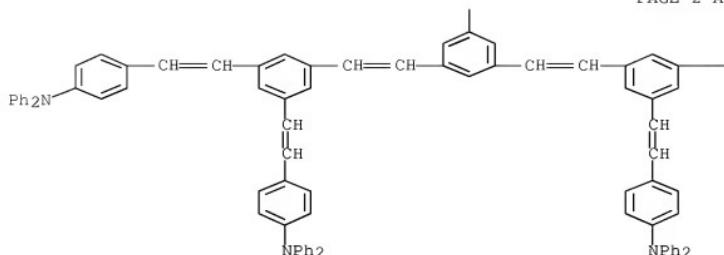


RN 623941-80-0 HCA
CN Benzenamine, 4,4',4'',4''',4'''',4''''',4'''''',4'''''''-[9,10-anthracenediylbis[5,1,3-benzenetriylbis(2,1-ethenediyl-5,1,3-benzenetriylidi-2,1-ethenediyl)]octakis[N,N-diphenyl- (9CI) (CA INDEX NAME)



PAGE 1-B

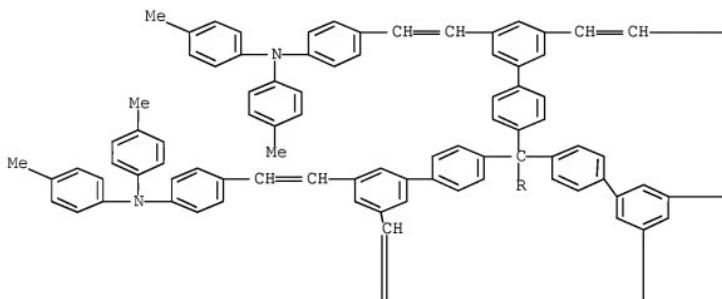




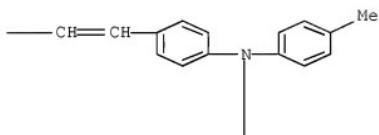
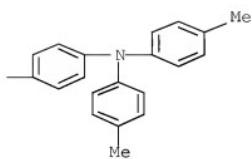
- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38, 76
- IT Electroluminescent devices
 (displays; static Induction transistors made of electroconductive dendrimers)
- IT Luminescent screens
 (electroluminescent; static Induction transistors made of electroconductive dendrimers)
- IT 623941-79-7 623941-80-0 624734-90-3 624734-92-5
 (semiconductor layer of static Induction transistor)
- L33 ANSWER 12 OF 22 HCA COPYRIGHT 2010 ACS on STN
 AN 138:376130 HCA Full-text
- TI Organic electroluminescent device with tetraaryl methane or tetraaryl silane
 IN Suzuki, Koichi; Ueno, Kazunori; Saito, Akito
 PA Canon Inc., Japan
 SO Jpn. Kokai Tokkyo Koho, 27 pp.
 CODEN: JKXXAF
- DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003138251	A	20030514	JP 2001-332855	20011030
PRAI JP 2001-332855		20011030		
AB The invention refers to an org. electroluminescent device comprising a tetraaryl methane or tetraaryl silane.				
IT 522665-93-6 522666-01-9 (org. electroluminescent device with tetraaryl methane or tetraaryl silane)				
RN 522665-93-6 HCA				
CN Benzenamine, 4,4',4'',4''',4''''',4''''''',4'''''''',4'''''''''				
[methanetetracylketakis([1,1'-biphenyl]-4',3,5-triyldi-2,1-ethenediyl)octakis[N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)				

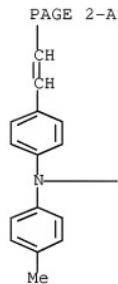
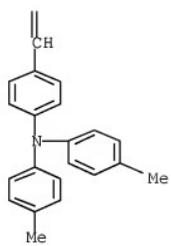
PAGE 1-A



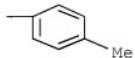
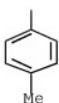
PAGE 1-B



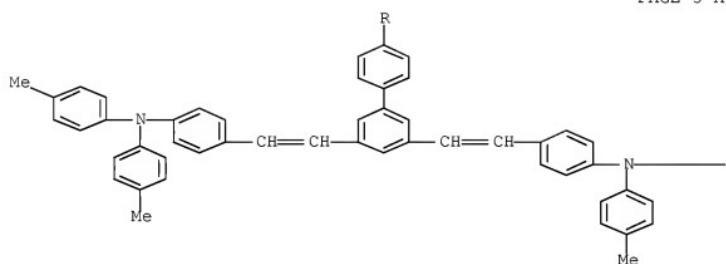
PAGE 2-A



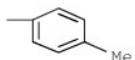
PAGE 2-B



PAGE 3-A



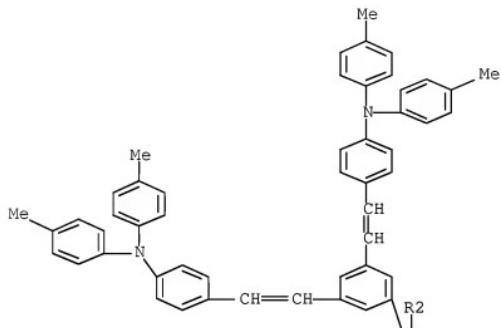
PAGE 3-B



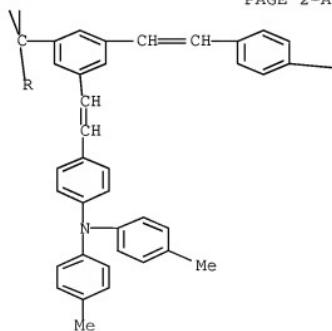
RN 522666-01-9 HCA

CN Benzenamine, 4,4',4'',4''',4''''',4'''''',4'''''''-
[methanetetracyltetraakis(5,1,3-benzenetriylid-2,1-
ethenediyl)octakis[N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

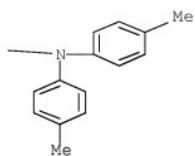
PAGE 1-A



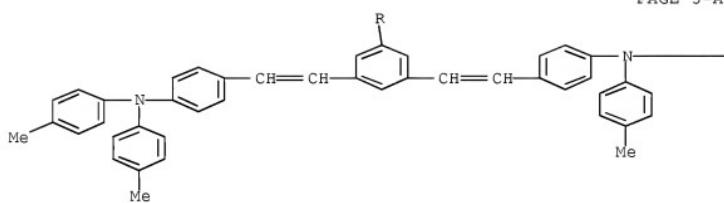
PAGE 2-A



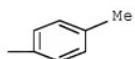
PAGE 2-B



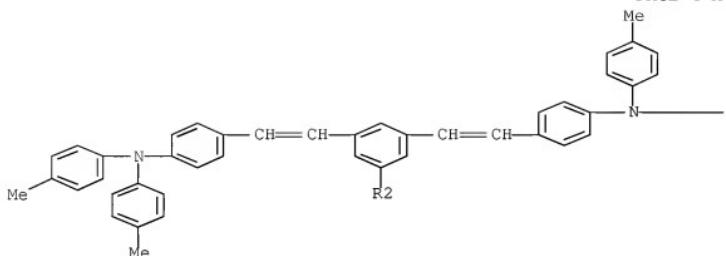
PAGE 3-A



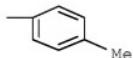
PAGE 3-B



PAGE 4-A



PAGE 4-B



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent device tetraaryl silane methane

IT Electroluminescent devices
(org. electroluminescent device with tetraaryl methane or tetraaryl silane)

IT 288105-05-5 522665-89-0 522665-90-3 522665-91-4 522665-92-5
522665-93-6 522665-94-7 522665-95-8 522665-96-9
522665-97-0 522665-98-1 522665-99-2 522666-00-8
522666-01-9 522666-02-0 522666-03-1 522666-04-2
522666-05-3 522666-06-4 522666-07-5 522666-08-6 522666-09-7
522666-10-0 522666-11-1 522666-12-2 522666-13-3 522666-14-4
522666-15-5 522666-16-6 522666-17-7 522666-18-8 522666-19-9
522666-20-2 522666-21-3 522666-22-4 522666-23-5
(org. electroluminescent device with tetraaryl methane or tetraaryl silane)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L33 ANSWER 13 OF 22 HCA COPYRIGHT 2010 ACS on STN

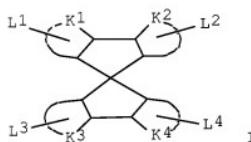
AN 138:245328 HCA Full-text
TI Organic luminescence device
IN Suzuki, Koichi; Senoo, Akihiro; Ueno, Kazunori
PA Canon Kabushiki Kaisha, Japan
SO PCT Int. Appl., 84 pp.
CODEN: PIXXD2

DT Patent
LA English
FAN.CNT 1

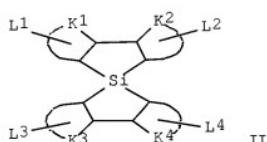
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003020847	A1	20030313	WO 2002-JP8803	20020830
	JP 2003077670	A	20030314	JP 2001-265871	20010903
	JP 2003115386	A	20030418	JP 2001-306084	20011002
	JP 4136352	B2	20080820		
	AU 2002329056	A1	20030318	AU 2002-329056	20020830
	US 20030235713	A1	20031225	US 2003-385461	20030312
	US 6916555	B2	20050712		
PRAI	JP 2001-265871	A	20010903		
	JP 2001-306084	A	20011002		
	WO 2002-JP8803	W	20020830		

OS MARPAT 138:245328

GI



I



II

AB Org. light-emitting devices which comprise ≥ 1 org. layers between an anode and a cathode are described in which ≥ 1 of the org. layers is formed from a spiro compd. described by the general formula I or II ($H1-4 =$ independently selected (un)substituted arom. or (un)substituted heterocyclic rings, with the restriction that ≥ 1 of $K1-4 =$ a heterocyclic ring contg. ≥ 1 nitrogen atom; and $L1-4 =$ independently selected H or other substituents).

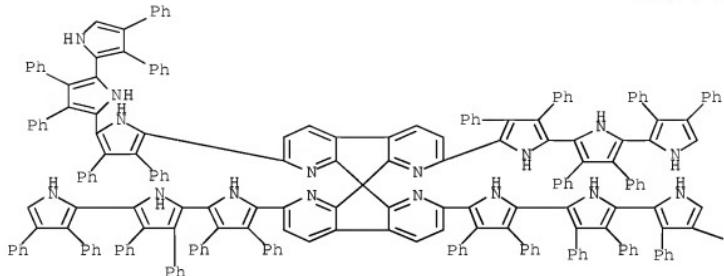
IT 501664-19-3 501664-37-5
(org. light-emitting devices with spiro compd.-contg. layers)

RN 501664-19-3 HCA

CN 9,9'-Spirobi[9H-cyclopenta[1,2-b:4,3-b']dipyridine],

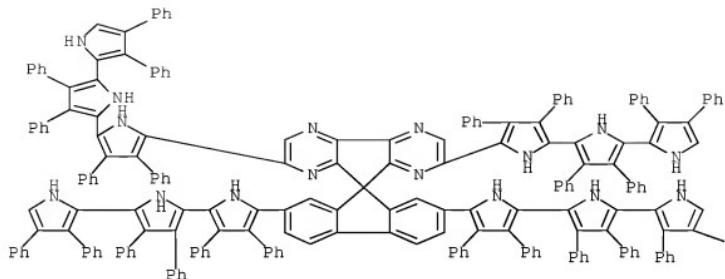
2,2',7,7'-tetrakis(3,3',3'',4,4',4'')-hexaphenyl[2,2':5',2'']-ter-1H-pyrrol]-5-yl)- (9CI) (CA INDEX NAME)

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RN 501664-37-5 HCA
CN Spiro[9H-cyclopenta[1,2-b:3,4-b']dipyrazine-9,9'-[9H]fluorene],
2,2',7,7'-tetrakis(3,3',3'',4,4',4'')-hexaphenyl[2,2':5',2'']-ter-1H-pyrrol]-5-yl)- (9CI) (CA INDEX NAME)



→ Ph

IPCI C09K0011-06 [ICM, 7]

IPCR C08G0061-00 [I,C*]; C08G0061-02 [I,A]; C08G0061-12 [I,A]; C09K0011-06 [I,C*]; C09K0011-06 [I,A]; H01L0051-00 [I,C*]; H01L0051-00 [I,A]; H01L0051-05 [I,C*]; H01L0051-30 [I,A]; H01L0051-50 [N,C*]; H01L0051-50 [N,A]; H05B0033-14 [I,C*]; H05B0033-14 [I,A]

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 28, 76

ST silicon spiro compd layer org light emitting device; org light emitting device spiro compd layer

IT Spiro compounds
(org. light-emitting devices with spiro

compd.-contg. layers)
IT Electroluminescent devices
 (org.; org. light-emitting devices with spiro
 compd.-contg. layers)
IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 25067-59-8,
Polyvinylcarbazole 501664-13-7 501664-14-8 501664-15-9
501664-16-0 501664-17-1 501664-18-2 501664-19-3
501664-20-6 501664-21-7 501664-22-8 501664-23-9 501664-24-0
501664-25-1 501664-26-2 501664-27-3 501664-28-4 501664-29-5
501664-30-8 501664-31-9 501664-32-0 501664-33-1 501664-34-2
501664-35-3 501664-36-4 501664-37-5 501664-38-6
501664-39-7 501664-40-0 501664-41-1 501664-42-2 501664-43-3
501664-44-4 501664-45-5 501664-46-6 501664-47-7 501664-48-8
501664-49-9 501664-50-2 501664-51-3 501664-52-4 501664-53-5
501664-54-6 501664-55-7 501664-56-8 501664-57-9 501664-58-0
501664-59-1 501664-60-4 501927-45-3 501928-66-1 501928-78-5
501928-79-6 501930-14-9 501930-33-2 501930-51-4 501930-53-6
501930-57-0 501930-61-6 501930-63-8 501930-64-9 501930-65-0
501930-75-2 501930-78-5 501930-93-4
 (org. light-emitting devices with spiro
 compd.-contg. layers)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 14 OF 22 HCA COPYRIGHT 2010 ACS on STN
AN 134:57071 HCA Full-text
TI Synthesis of hole-transporting hydrazone dendrimers
AU Nam, Haehyun; Kang, Dae Ho; Kim, Jai Kyeong; Park, Soo Young
CS School of Material Science and Engineering, Seoul National University,
Seoul, 151-742, S. Korea
SO Chemistry Letters (2000), (11), 1298-1299
CODEN: CMITAG; ISSN: 0366-7022
PB Chemical Society of Japan
DT Journal
LA English
AB Hole-transporting arom. hydrazone dendrimers were synthesized by the convergent method through repeated protecting of the hydrazine group by phthalic anhydride and Vilsmeier-Haack formylation of the arom. ring. Structures of dendrimers were characterized by NMR, IR, GC/MS (FAB+), and elemental anal. The arom. hydrazone dendrimers are very sol. in chlorobenzene, chloroform, and DMF, in contrast to the rather limited soly. of linear hydrazone mols. The dendrimer films are clear, transparent, homogeneous, and mech. tough; for the second generation dendrimer (G2) Tg is 164°, however that of the G1 compd. was not detected by DSC. The HOMO to LUMO excitation energy for G1 and G2 is 2.8 eV and 2.5 eV, resp. and the red-shifted absorption of G2 over that of G1 suggests that the dendritic structure provides partial conjugation of hydrazone branches. According to this conjugation effect, the ionization potential (IP) of G2 is higher than that of G1 by 0.1 eV. The hole transport properties of the dendrimers were measured using a multilayer EL structure of ITO/dendrimer/Alq3/Al [Alq3 =

Tris-(8-hydroxyquinoline)aluminum]. The quantum efficiency and luminance of the dendrimers are higher than, or at least comparable to those of PVK.

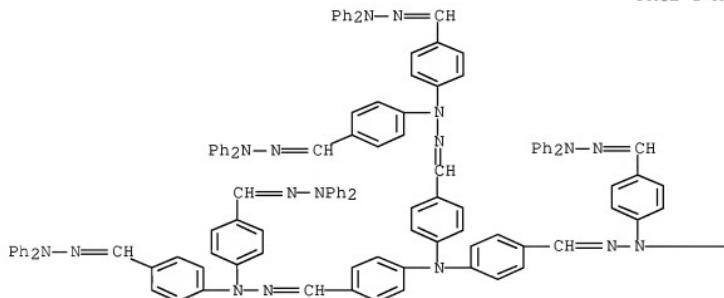
IT 313674-30-5P

(G2 dendrimer; prepn. and structure and luminescence of
hole-transporting hydrazone dendrimers via convergent formylation)

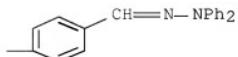
RN 313674-30-5 HCA

CN Benzaldehyde, 4,4',4''-nitrilotris-,
tris[bis[4-[(diphenylhydrazone)methyl]phenyl]hydrazone] (9CI) (CA
INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 73

IT 313674-30-5P

(G2 dendrimer; prepn. and structure and luminescence of
hole-transporting hydrazone dendrimers via convergent formylation)

OSC.G 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 15 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 132:115023 HCA Full-text

TI Amorphous molecular materials for optoelectronic devices and process
for producing the same

IN Oldham, Warren, Jr.

PA Fed Corporation, USA

SO PCT Int. Appl., 32 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000003565	A1	20000120	WO 1999-US15437	19990709
PRAI US 1998-92418P	P	19980710		

OS MARPAT 132:115023

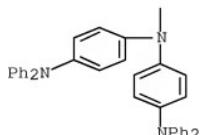
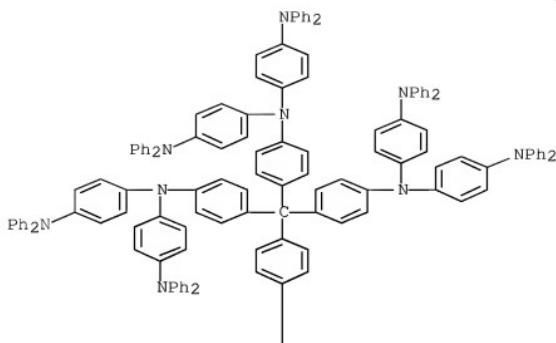
AB Org. light-emitting devices comprising a first electrode, a second
electrode, and an org. stack interposed between the first electrode and the
second electrode, are described in which the org. stack further comprises ≥ 1
org. layer (esp. a hole-transporting layer) which further comprises org.
compds. so that the device continues to function in temps. in $>145^\circ$. The
org. layer may comprise org. compds. with tetrahedral core structures (e.g.,
tetraphenylmethane, tetraphenylsilane, or tetraphenyladamantane),
tetrahedral core structures contg. arom. side groups, tetrahedral core
structures contg. arom. amine side groups, sym. tetrahedral core structures,
sym. tetrahedral core structures contg. arom. side groups, and/or sym.
tetrahedral core structures contg. arom. amine side groups.

IT 255824-66-9 255824-73-8

(org. light-emitting devices using amorphous
materials with tetrahedral cores)

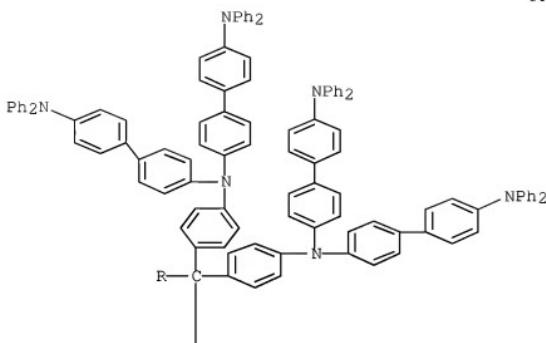
RN 255824-66-9 HCA

CN 1,4-Benzenediamine, N,N'',N''',N''''-(methanetetracyltetra-4,1-
phenylene)tetrakis[N-[4-(diphenylamino)phenyl]-N',N'-diphenyl- (9CI)
(CA INDEX NAME)

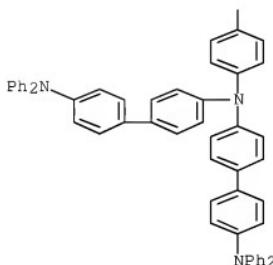


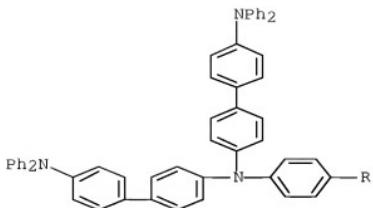
RN 255824-73-8 HCA
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N',N'',N'''-(methanetetrayltetra-
 4,1-phenylene)tetrakis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-
 N',N'-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A





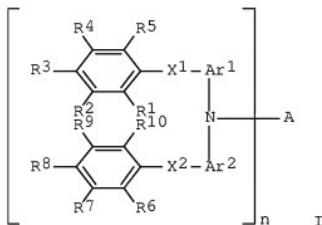
- IPCI H05B0033-00 [ICM]
 IPCR C09K0011-06 [I,C*]; C09K0011-06 [I,A]; H01L0051-00 [I,C*]; H01L0051-00 [I,A]; H01L0051-05 [I,C*]; H01L0051-30 [I,A]; H01L0051-50 [I,C*]; H01L0051-50 [I,A]; H05B0033-14 [I,C*]; H05B0033-14 [I,A]
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25, 76
- ST org light emitting device tetrahedral core compd; tetraphenylmethane deriv light emitting device; tetraphenylsilane deriv light emitting device; tetraphenyladamantane deriv light emitting device; tetraphenylgermane deriv light emitting device; tetraphenylplumbane deriv light emitting device; tetraphenylstannane deriv light emitting device
- IT Electroluminescent devices
 (org. light-emitting devices using amorphous materials with tetrahedral cores)
- IT Electroluminescent devices
 (org.; org. light-emitting devices using amorphous materials with tetrahedral cores)
- IT 595-89-1D, Tetraphenylplumbane, derivs. 595-90-4D, Tetraphenylstannane, derivs. 1048-05-1D, Tetraphenylgermane, derivs. 1048-08-4D, Tetraphenylsilane, derivs. 16004-75-4D, derivs. 255824-03-4 255824-04-5 255824-05-6 255824-06-7 255824-08-9 255824-45-4 255824-53-4 255824-54-5 255824-56-7 255824-66-9 255824-73-8 255904-22-4
 (org. light-emitting devices using amorphous materials with tetrahedral cores)
- IT 255721-13-2P
 (org. light-emitting devices using amorphous materials with tetrahedral cores)
- IT 86-74-8, Carbazole 105309-59-9, Tetrakis(4-bromophenyl)methane 134080-67-4, Tetrakis(4-iodophenyl)methane 201338-08-1
 (org. light-emitting devices using amorphous materials with tetrahedral cores)
- OSC.G 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 16 OF 22 HCA COPYRIGHT 2010 ACS on STN
AN 130:58899 HCA Full-text
TI Aromatic amine compound luminescent material and
electroluminescent device with high luminance and luminescent
efficiency using it
IN Onikubo, Shunichi; Okutsu, Satoshi; Tamano, Michiko; Enokida, Toshio
PA Toyo Ink Mfg. Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 36 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10302960	A	19981113	JP 1997-112088	19970430
JP 3498533	B2	20040216		
PRAI JP 1997-112088		19970430		
OS MARPAT 130:58899				

GI



AB The title material comprises an arom. amine compd. described by the general formula I [n = 3-15; A = group contg. (un)substituted (condensed) arom. or heterocyclic arom. group; A ≠ O; Ar1-2 = (un)substituted (condensed) arom. group; X1-2 = O, S, CO, SO2, CxH2xOCyH2y; (un)substituted C1-20 alkylidene, alkylene, (un)substituted divalent alicyclic group; x, y = 0-20; x + y ≠ 0; R1-10 = H, halo, (un)substituted alkyl, alkoxy, arom. group, heterocyclic arom. group, amino; R1-5 or R6-10 may form ring]. The device has a light-emitting layer contg. I. The device showed high luminance and luminescent efficiency and long lifetime.

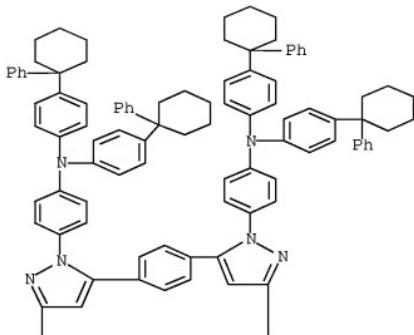
IT 216975-24-5
(arom. amine-based emitting materials for

electroluminescent devices)

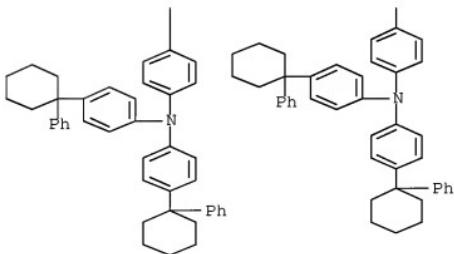
RN 216975-24-5 HCA

CN Benzenamine, 4,4',4'',4'''-(1,4-phenylenedi-1H-pyrazole-5,1,3-triyl)tetraakis[N,N-bis[4-(1-phenylcyclohexyl)phenyl]- (9CI) (CA INDEX NAME)

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IPC1 H05B0033-14 [ICM,6]; C09K0011-06 [ICS,6]

IPCR H05B0033-14 [I,C*]; H05B0033-14 [I,A]; C09K0011-06 [I,C*]; C09K0011-06 [I,A]; H01L0051-00 [I,C*]; H01L0051-00 [I,A]; H01L0051-05 [I,C*];

H01L0051-30 [I,A]; H01L0051-50 [I,C*]; H01L0051-50 [I,A]; H05B0033-12
 [I,C*]; H05B0033-12 [I,A]
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 Section cross-reference(s): 25, 76
 ST arom amine electroluminescent device high luminance;
 luminescent efficiency electroluminescent device arom amine
 IT Electroluminescent devices
 (arom. amine-based emitting materials for
 electroluminescent devices)
 IT Amines, uses
 (arom.; arom. amine-based emitting materials for
 electroluminescent devices)
 IT Phosphors
 (electroluminescent; arom. amine-based emitting materials
 for electroluminescent devices)
 IT 209165-07-1 209165-09-3 209165-27-5 209165-31-1 216974-92-4
 216974-93-5 216974-94-6 216974-95-7 216974-97-9 216974-99-1
 216975-00-7 216975-02-9 216975-03-0 216975-05-2 216975-07-4
 216975-09-6 216975-11-0 216975-13-2 216975-17-6 216975-19-8
 216975-21-2 216975-22-3 216975-23-4 216975-24-5
 216975-25-6 216975-26-7 216975-27-8 216975-28-9 216975-29-0
 216975-30-3 216975-31-4 216975-32-5 217086-74-3 217086-98-1
 217087-26-8 217087-30-4 217087-34-8
 (arom. amine-based emitting materials for
 electroluminescent devices)
 IT 216974-91-3
 (arom. amine-based emitting materials for
 electroluminescent devices and devices using it)
 OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L33 ANSWER 17 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 129:87816 HCA Full-text

OREF 129:17967a,17970a

TI Material for organolectroluminescence device and
 organolectroluminescence device using the material
 IN Tamano, Michiko; Onikubo, Toshikazu; Okutsu, Satoshi; Enokida, Toshio
 PA Toyo Ink Manufacturing Co., Ltd., Japan
 SO Eur. Pat. Appl., 26 pp.
 CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 848579	A2	19980617	EP 1997-310157	19971216
	EP 848579	A3	19980902		
	EP 848579	B1	20030326		
	JP 10233287	A	19980902	JP 1997-301457	19971104
	JP 3606025	B2	20050105		
	US 5948941	A	19990907	US 1997-990193	19971212
PRAI	JP 1996-335217	A	19961216		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 129:87816

AB Compds. suitable for use in electroluminescent devices are described by such general formula as I (A= Q, Q1, Q2; Ar1-6 = independently selected (un)substituted aryl groups; X1-6 = independently selected O, S, C:O, SO₂, Si(B1)B2, N(B1), PB1, P(:O)B1-, -(CH₂)_x-O-(CH₂)_y-, (un)substituted alkylene groups, or (un)substituted alicyclic moieties; B1 and B2 = independently selected (un)substituted alkyl group or a (un)substituted aryl group), etc. The materials may be hole-injecting materials. Devices using the materials, including display devices, are also described, as is the use of the materials in the devices.

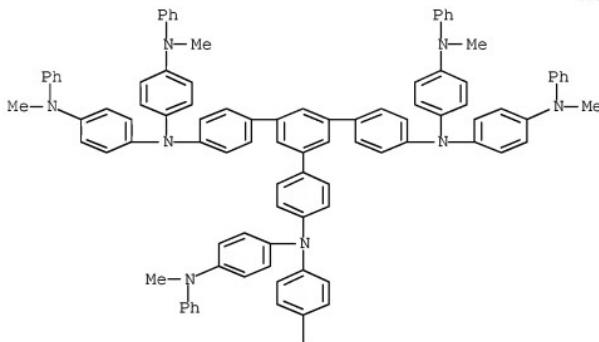
IT 209165-24-2

(materials for org. electroluminescent devices based on benzene and triphenylamine derivs. and devices using them)

RN 209165-24-2 HCA

CN [1,1':3',1''-Terphenyl]-4,4''-diamine,
5'-[4-[bis[4-(methylphenylamino)phenyl]amino]phenyl]-N,N,N',N'-tetrakis[4-(methylphenylamino)phenyl]- (9CI) (CA INDEX NAME)

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CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76

ST benzene deriv electroluminescent material; triphenylamine deriv electroluminescent material; display electroluminescent device org material; hole injecting org material electroluminescent device

IT Phosphors
(electroluminescent; materials for org.
electroluminescent devices based on benzene and triphenylamine derivs. and devices using them)

IT Electroluminescent devices
(materials for org. electroluminescent devices based on benzene and triphenylamine derivs. and devices using them)

IT Polycarbonates, uses
(materials for org. electroluminescent devices based on benzene and triphenylamine derivs. and devices using them)

IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 15082-28-7
24936-68-3, uses 123847-85-8,
4,4'-Bis(N-(1-naphthyl)-N-phenylamino)biphenyl 175395-59-2
188049-36-7 209165-05-9 209165-06-0 209165-08-2 209165-10-6
209165-12-8 209165-14-0 209165-15-1 209165-16-2 209165-17-3
209165-18-4 209165-19-5 209165-20-8 209165-21-9 209165-22-0
209165-23-1 209165-24-2 209165-26-4 209165-27-5
209165-28-6 209165-29-7 209165-31-1 209165-32-2 209165-34-4
(materials for org. electroluminescent devices based on benzene and triphenylamine derivs. and devices using them)

IT 209165-07-1P
(materials for org. electroluminescent devices based on benzene and triphenylamine derivs. and devices using them)

IT 209165-09-3P 209165-25-3P 209165-30-0P
(materials for org. electroluminescent devices based on benzene and triphenylamine derivs. and devices using them)

IT 80-73-9, 1,3-Dimethyl-2-imidazolidinone 98-95-3, Nitrobenzene, reactions 615-68-9 4316-58-9, Tris(p-bromophenyl)amine 10081-67-1 18162-30-6 209165-33-3
(materials for org. electroluminescent devices based on benzene and triphenylamine derivs. and devices using them)

OSC.G 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)

L33 ANSWER 18 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 128:173587 HCA Full-text

OREF 128:34101a, 34104a

TI A novel class of π -electron dendrimers for thermally and morphologically stable amorphous molecular materials

AU Katsuma, Katsuhiko; Shirota, Yasuhiro

CS Department Applied Chemistry, Faculty Engineering, Osaka University, Suita, 565, Japan

SO Advanced Materials (Weinheim, Germany) (1998), 10(3),

223-226

CODEN: ADVMEW; ISSN: 0935-9648

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

AB The novel org. hyperbranched π -electron systems, 1,3,5-tris[N-(4'-methylbiphenyl-4-yl)-N-(4-diphenylaminophenyl)amino]benzene (TDAB-G1(a)) and 1,3,5-tris[N-[4-bis(4-methylphenyl)aminophenyl]-N-(4-diphenylaminophenyl)amino]benzene (TDAB-G1(b)), were synthesized via the Ullmann reaction and characterized by ^1H -, ^{13}C -NMR, electron absorption spectroscopy, and elemental anal. TDAB-G1(a) was obtained as a polycryst. material, whereas TDAB-G1(b) was an amorphous glass. DSC anal. of TDAB-G1(a) gave a m.p. of 187° . When the melted sample was cooled in air, a glass was formed spontaneously. Reheating of the glass sample resulted in a glass transition at $T_g = 128^\circ$ giving a supercooled liq. Likewise, the amorphous reptyd. sample of TDAB-G1(b) exhibited a glass transition at $T_g = 134^\circ$ when heated. Unique multiredox processes involving as many as 6- and 9-electron reversible oxidns. were obsd. in the cyclic voltammograms of TDAB-G1(a) and TDAB-G1(b), resp. TDAB-G1(b) was used as a hole-transport material in a multilayer org. LED consisting of the double-hole transport layer and an emitting layer which contained N,N'-diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine (TPD) doped with rubrene as the emitting material and with tris(8-quinolinolato) Al as the electron transport material. This device emitted yellow light and the electroluminescence showed a peak at 560 nm in agreement with the luminescence peak of rubrene.

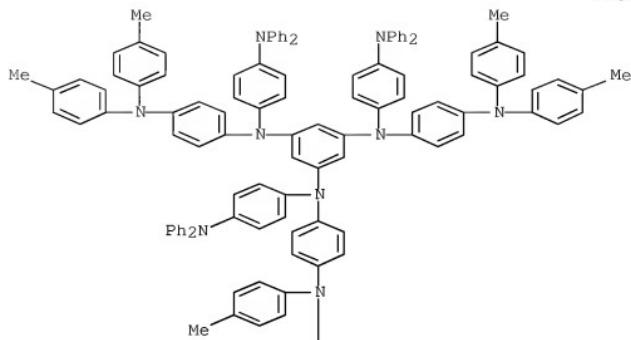
IT 874946-05-1P

(A novel class of π -electron dendrimers for thermally and morphologically stable amorphous molecular materials)

RN 874946-05-1 HCA

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-[bis(4-methylphenyl)amino]phenyl]-N1,N3,N5-tris[4-(diphenylamino)phenyl]-
(CA INDEX NAME)

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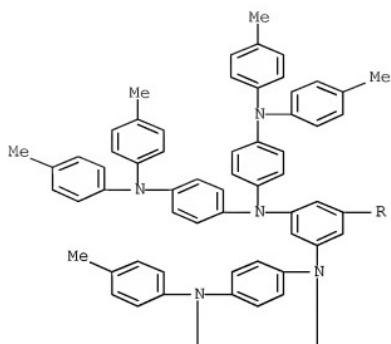
IT 202868-45-9P

(prepn., glass transition, redox potential, and application in
LED as hole transport material of)

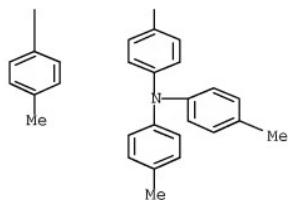
RN 202868-45-9 HCA

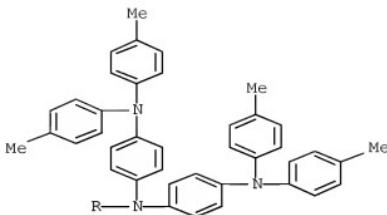
CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis[4-[bis(4-methylphenyl)amino]phenyl]- (CA INDEX NAME)

PAGE 1-A



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CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25, 72
 IT Glass transition
 (of dendritic phenylaminobenzene derivs. prepd. for LED hole transport materials)
 IT Redox potential
 (of dendritic phenylaminobenzene derivs. prepd. for LED hole transport materials studied by cyclovoltammetry)
 IT Electroluminescent devices
 (prepn. of dendritic phenylaminobenzene derivs. for hole transport)
 IT 874946-05-1P
 (A novel class of π -electron dendrimers for thermally and morphologically stable amorphous molecular materials)
 IT 55290-86-3, 4-Iodo-4'-methylbiphenyl 58047-43-1 153521-91-6
 (prepn. of dendritic phenylaminobenzene derivs. as LED hole transport materials)
 IT 202868-44-8P 202868-45-9P
 (prepn., glass transition, redox potential, and application in LED as hole transport material of)
 OSC.G 113 THERE ARE 113 CAPLUS RECORDS THAT CITE THIS RECORD (113 CITINGS)

L33 ANSWER 19 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 128:17237 HCA Full-text

OREF 128:3255a,3258a

TI Organic electroluminescent device elements

IN Enokida, Toshio; Tamano, Michiko

PA Toyo Ink Mfg. Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 33 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

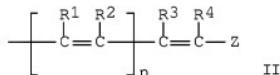
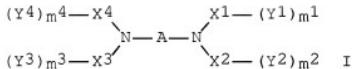
PI JP 09268284

A 19971014

JP 1996-78501

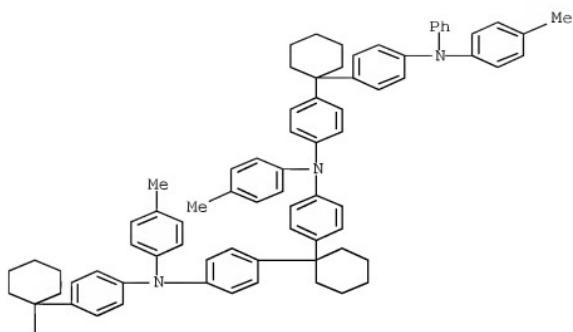
19960401

JP 3564859
PRAI JP 1996-78501
OS MARPAT 128:17237
GI

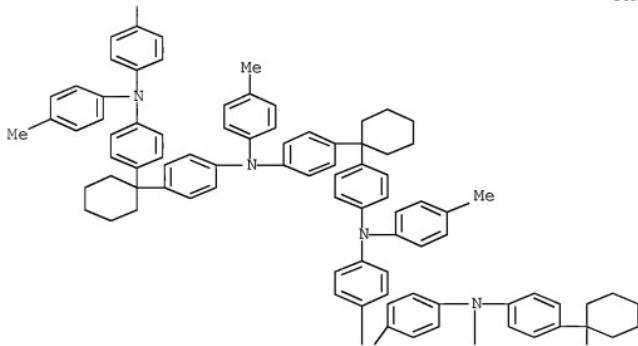


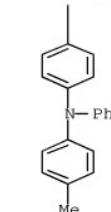
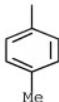
- | | |
|----|---|
| AB | The elements comprise the phosphors I contg. II; I [A, X1-4 = C2-20 arylene; m1, m2, m3, m4 = 0-2; Y1-4 = II] II [R1-4 = H, (un)substituted alkyl, (un)substituted aryl, CN; Z = (un)substituted aryl; n = 0, 1]; a tertiary amine deriv. (B1,2N)G(NB3,4) formed between the phosphor and the anode [B1-4 = (un)substituted C6-20 aryl; G = (un)substituted arylene]; and a metal complex Q1,2Gal formed between the phosphor and the cathode [Q1,2 = (un)substituted hydrobenzoquinoline deriv.; L = halo, (un)substituted (cyclo)alkyl, aryl cong. optional (un)substituted N, OR (R = L)]. |
| IT | 189263-95-4
(org. electroluminescent device elements) |
| RN | 189263-95-4 HCA |
| CN | Benzenamine, 4, 4'-cyclohexylidenebis[N-(4-methylphenyl)-N-[4-[1-[4-[(4-methylphenyl)[4-[1-[4-[(4-methylphenyl)phenylamino]phenyl]cyclohexyl]phenyl]amino]phenyl]cyclohexyl]phenyl]- (9CI) (CA INDEX NAME) |

PAGE 1-A



PAGE 2-A





IPCI C09K0011-06 [ICM,6]; H05B0033-14 [ICS,6]
 IPCR H05B0033-14 [I,C*]; H05B0033-14 [I,A]; C09K0011-06 [I,C*]; C09K0011-06
 [I,A]; H01L0051-00 [I,C*]; H01L0051-00 [I,A]; H01L0051-05 [I,C*];
 H01L0051-30 [I,A]; H01L0051-50 [I,C*]; H01L0051-50 [I,A]
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 ST electroluminescent org phosphor
 IT Phosphors
 (electroluminescent; org. electroluminescent
 device elements)
 IT Electroluminescent devices
 (org. electroluminescent device elements)
 IT Metallophthalocyanines
 Polycarbonates, uses
 (org. electroluminescent device elements)
 IT 517-51-1 905-62-4 980-26-7 1047-16-1 1499-10-1 2085-33-8
 7520-01-6 13978-85-3 14642-34-3 15082-28-7 38215-36-0
 51325-91-8 58361-82-3 58473-78-2 61843-06-9 65181-78-4
 73276-70-7 99762-78-4 123847-85-8 139255-17-7 143010-15-5
 146162-54-1 146162-63-2 150405-69-9 151026-65-2 164259-44-3
 166444-98-0 185505-35-5 186965-89-9 188049-36-7 188049-37-8
 188049-39-0 188049-41-4 189263-95-4 198903-35-4
 198903-36-5 198903-37-6 198903-38-7 198903-39-8 198903-40-1
 198903-41-2 198903-42-3 198903-43-4 198903-44-5 198903-45-6
 198903-46-7 198903-47-8 198903-48-9 198903-49-0 198903-50-3
 198903-51-4 198903-52-5 198903-53-6 198903-54-7 198903-55-8
 198903-56-9 198903-57-0 198903-58-1 198903-59-2 198903-60-5
 198903-61-6 198903-62-7 198903-63-8 198903-64-9
 (org. electroluminescent device elements)
 OSC.G 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)

L33 ANSWER 20 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 127:168833 HCA Full-text

OREF 127:32572h,32573a

TI Material for organic electroluminescent device

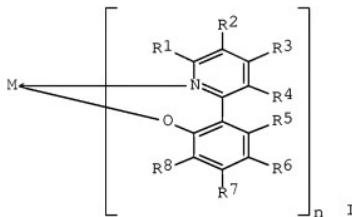
IN Enokida, Toshio; Okutsu, Satoshi; Tamano, Michiko

PA Toyo Ink Mfg. Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF

DT Patent
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09176629	A	19970708	JP 1995-336240	19951225
	JP 3475620	B2	20031208		
PRAI	JP 1995-336240		19951225		
OS	MARPAT 127:168833				
GI					



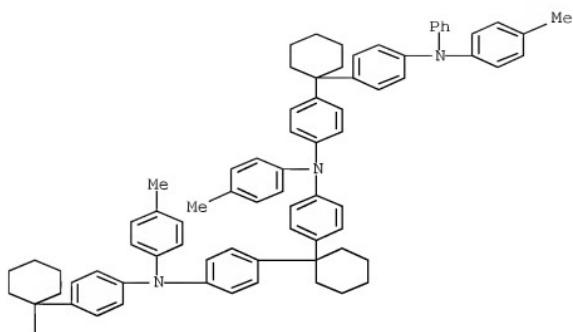
AB The invention relates to a material used for an org. electroluminescent device, wherein the light- emitting layer contains the compd. represented by I [R1-8 = H, halo, alkyl, alkoxy, aryl etc.; R1-4 and R5-8 may form a N- contg. arom. ring with neighboring groups; M = di or tri valent metal; n = 2 or 3].

IT 189263-95-4
(material for org. electroluminescent device)

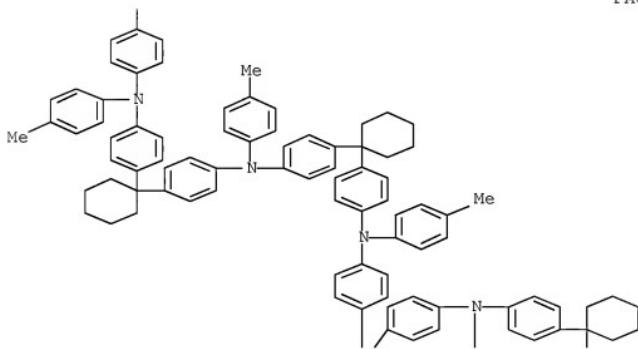
RN 189263-95-4 HCA

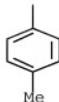
CN Benzenamine, 4,4'-cyclohexylidenebis[N-(4-methylphenyl)-N-[4-[1-[4-[(4-methylphenyl)[4-[1-[4-[(4-methylphenyl)phenyl]amino]phenyl]cyclohexyl]phenyl]amino]phenyl]cyclohexylphenyl]amino]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

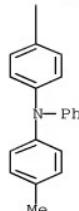


PAGE 2-A





Me



Me

IPCI C09K0011-06 [ICM,6]

IPCR C09K0011-06 [I,C*]; C09K0011-06 [I,A]; H05B0033-14 [I,C*]; H05B0033-14 [I,A]

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent device metal complex

IT Electroluminescent devices

Fluorescent substances

(material for org. electroluminescent device)

IT 1499-10-1 5862-38-4 27310-62-9 51325-91-8 123847-85-8

188049-36-7 189263-95-4 193622-08-1 193622-09-2

193622-10-5 193622-11-6 193622-12-7 193622-13-8 193622-14-9

193622-15-0 193622-16-1 193622-17-2 193622-18-3 193622-19-4

193622-20-7 193622-21-8 193622-22-9 193622-23-0 193622-25-2

193622-27-4 193622-29-6 193622-31-0 193622-32-1 193622-33-2

193622-34-3 193622-35-4 193622-36-5 193622-37-6 193622-38-7

193622-39-8 193622-40-1 193622-41-2 193622-42-3 193622-43-4

(material for org. electroluminescent device)

OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L33 ANSWER 21 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 127:72759 HCA Full-text

OREF 127:13779a,13782a

TI Organic electroluminescence material and
electroluminescent device using that

IN Okutsu, Satoshi; Enokida, Toshio; Tamano, Michiko

PA Toyo Ink Mfg. Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

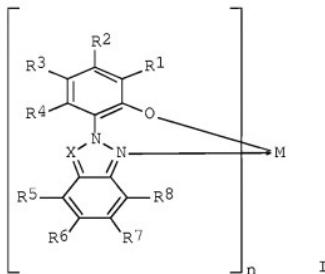
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09111234	A	19970428	JP 1995-273807	19951023
	JP 3653825	B2	20050602		



AB The invention related to an org. electroluminescence material represented by I [X = N, CH; R₁-8 = independently, H, halo, alkyl, aryl, alkoxy, etc.; M = metal; n = 1-3 integer]. The material is suited for use in making high luminous and reliable electroluminescent devices.

IT 191218-21-0
(org. electroluminescence material fro
electroluminescent device)

RN 191218-21-0 HCA

CN Benzenamine, N,N'-([1,1'-bicyclohexyl]-1,1'-diyldi-4,1-phenylene)bis[4-methyl-N-[4-[1'-(4-[4-methylphenyl]phenyl)-4-[1-[4-(4-methylphenyl)[4-[1-[4-(4-methylphenyl)phenylmethyl]phenyl]cyclohexyl]phenyl]amino]phenyl][1,1'-bicyclohexyl]-1-yl]phenyl]amino]phenyl][1,1'-bicyclohexyl]-1-yl]phenyl]- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IPCI C09K0011-06 [ICM,6]; H05B0033-14 [ICS,6]; H05B0033-24 [ICS,6]

IPCR H05B0033-14 [I,C*]; H05B0033-14 [I,A]; C09K0011-06 [I,C*]; C09K0011-06 [I,A]; H01L0051-50 [I,C*]; H01L0051-50 [I,A]; H05B0033-12 [I,C*]; H05B0033-12 [I,A]; H05B0033-24 [I,C*]; H05B0033-24 [I,A]; H05B0033-26 [I,C*]; H05B0033-26 [I,A]

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescence electroluminescent device
metal complex

IT Electroluminescent devices
Luminescence, electroluminescence
(org. electroluminescence material fro

electroluminescent device)
 IT Coordination compounds
 (org. electroluminescence material fro
 electroluminescent device)
 IT 18907-32-9 22945-72-8 28771-06-4 93470-37-2 93555-65-8
 174961-74-1 191217-82-0 191217-83-1 191217-84-2 191217-85-3
 191217-86-4 191217-87-5 191217-88-6 191217-89-7 191217-90-0
 191217-91-1 191217-92-2 191217-93-3 191217-94-4 191217-95-5
 191217-96-6 191217-98-8 191218-00-5 191218-02-7 191218-03-8
 191218-04-9 191218-05-0 191218-06-1 191218-07-2 191218-08-3
 191218-09-4 191218-10-7 191218-11-8 191218-12-9 191218-13-0
 191218-14-1 191218-15-2 191218-16-3 191218-17-4 191218-18-5
 191218-19-6 191218-20-9 191218-21-0 191218-23-2
 (org. electroluminescence material fro
 electroluminescent device)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L33 ANSWER 22 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 126:310317 HCA Full-text

OREF 126:60025a,60028a

TI Light-emitting material for organic
electroluminescence device, and organic
electroluminescence device for which the light-
emitting material is adapted

IN Enokida, Toshio; Tamano, Michiko; Okutsu, Satoshi

PA Toyo Ink Manufacturing Co., Ltd., Japan

SO Eur. Pat. Appl., 46 pp.

CODEN: EPXXDW

DT Patent

LA English

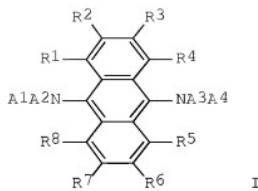
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 765106	A2	19970326	EP 1996-305586	19960730
	EP 765106	A3	19970813		
	EP 765106	B1	20021127		
	EP 1146034	A1	20011017	EP 2001-113795	19960730
	US 5759444	A	19980602	US 1996-688879	19960731
	KR 204220	B1	19990615	KR 1996-42007	19960924
	US 6251531	B1	20010626	US 1998-30791	19980226
PRAI	JP 1995-245607	A	19950925		
	JP 1996-12430	A	19960129		
	EP 1996-305586	A3	19960730		
	US 1996-688879	A3	19960731		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 126:310317

GI



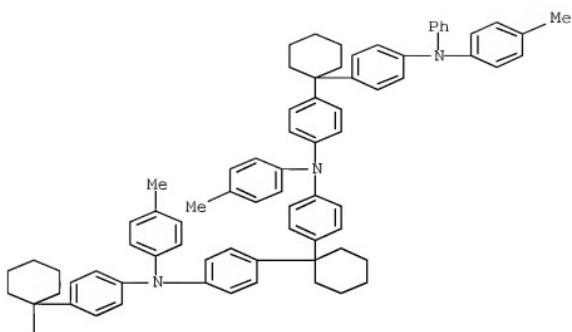
AB The title light-emitting compds. are described by the general formula I (A1-A4 are individually selected C6-16 substituted or unsubstituted aryl groups; and each of R1-8 is independently a hydrogen atom, a halogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted alkoxy group, a substituted or unsubstituted aryl group or a substituted or unsubstituted amino group, provided that adjacent substituents may form an aryl ring). Use of the compds. as light-emitting materials in org. electroluminescent devices, and org. electroluminescent devices contg. them, are also described.

IT 189263-95-4
 (anthracenediamine deriv.-based light-emitting
 materials for org. electroluminescent devices and the
 devices)

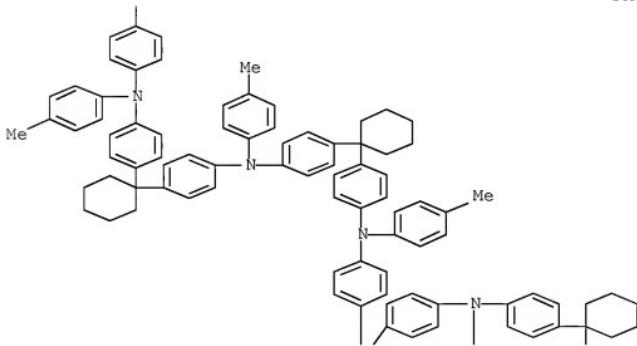
RN 189263-95-4 HCA

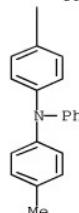
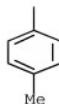
CN Benzenamine, 4,4'-cyclohexylidenebis[N-(4-methylphenyl)-N-[4-[1-[4-[(4-methylphenyl)[4-[1-[4-[(4-methylphenyl)phenyl]amino]phenyl]cyclohexyl]phenyl]amino]phenyl]cyclohexyl]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A





- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25
- ST anthracenediamine deriv **electroluminescent material; LED**
 anthracenediamine deriv **electroluminescent material**
- IT **Electroluminescent devices**
 (anthracenediamine deriv.-based light-emitting
 materials for org. **electroluminescent devices and the**
 devices)
- IT **Phosphors**
 (**electroluminescent; anthracenediamine deriv.-based**
 light-emitting materials for org.
electroluminescent devices and the devices)
- IT 574-93-6, Phthalocyanine 905-62-4,
 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole 2085-33-8 13978-85-3
 14642-34-3 14855-54-0 15082-28-7 16842-52-7 58473-78-2
 61843-06-9 65181-78-4 73276-70-7 89114-90-9 123847-85-8
 146162-63-2 150405-69-9 151026-65-2 164259-44-3 166444-98-0
 185690-39-5 188049-36-7 188049-37-8 188049-39-0 188049-40-3
 188049-41-4 189263-95-4
 (anthracenediamine deriv.-based light-emitting
 materials for org. **electroluminescent devices and the**
 devices)
- IT 517-51-1 980-26-7 1047-16-1 1499-10-1 7520-01-6 38215-36-0
 51325-91-8 99762-78-4 185505-35-5 186965-89-9
 (anthracenediamine deriv.-based light-emitting
 materials for org. **electroluminescent devices and the**
 devices)
- IT 177799-13-2 177799-16-5 189263-81-8 189263-82-9 189263-83-0
 189263-84-1 189263-85-2 189263-86-3 189263-87-4 189263-88-5
 189263-89-6 189263-90-9 189263-91-0 189263-92-1 189263-93-2
 189263-94-3 189263-96-5 189263-97-6 189263-98-7 189263-99-8
 189264-00-4 189264-01-5
 (anthracenediamine deriv.-based light-emitting
 materials for org. **electroluminescent devices and the**
 devices)

IT 177799-11-0P 177799-12-1P 177799-14-3P 177799-15-4P
(anthracenediamine deriv.-based light-emitting
materials for org. electroluminescent devices and the
devices)

IT 84-65-1, Anthraquinone 90-30-2, 1-Naphthyl-phenylamine 101-67-7
122-39-4, Diphenylamine, reactions 523-27-3, 9,10-Dibromoanthracene
10081-67-1 113705-11-6, 9,10-Diiodoanthracene
(anthracenediamine deriv.-based light-emitting
materials for org. electroluminescent devices and the
devices)

OSC.G 22 THERE ARE 22 CAPLUS RECORDS THAT CITE THIS RECORD (31
CITINGS)